United States Department of the Interior

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Bureau of Land Management

Environmental Assessment UT-070-2008-104

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CONSOLIDATION COAL COMPANY
EMERY MINE-MILLER CANYON TRACT LEASE
UTU-86038

Emery County, Utah

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1 PURPOSE AND NEED

1.1 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the Miller Canyon Tract (UTU-86038) (the Tract) coal leasing and mining project (the Project) as proposed by Consolidation Coal Company (Consol). The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significant" is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact (FONSI). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record (DR) may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A DR, including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in "significant" environmental impacts (effects) beyond those already addressed in the Price Field Office Record of Decision (ROD)/Resource Management Plan (RMP) (BLM 2008a), henceforth referred to as the Price RMP.

1.2 Background

Consol submitted an Application for Lease of Federal Coal Deposits to the BLM in February 2008. Under this application, Consol proposes to expand its current underground coal operation at its Emery Mine, located approximately 65 miles south of Price, in Emery County, Utah. The Emery Mine is developed in the Emery Coal field, which is designated by the BLM as a Known Recoverable Coal Resource Area (KRCRA) The underground operations would be expanded to the east of the existing mine into the Miller Canyon Tract. The BLM administers the coal/mineral estate on the entire Tract, as well as the surface rights on the southern 40-acre parcel. The Tract contains 120 acres that are currently utilized for grazing. Consol would lease this 120-acre tract from BLM for the purpose of extracting the coal reserves by underground mining. The Tract is located at:

Township 22 South, Range 6 East, BLM, Utah		Ownership	
	Acres	**Surface**	**Coal**
Section 23: S½SW¼	80.0	Consol	BLM
Section 26: NW¼ NW¼	40.0	BLM	BLM
Total	120.0		

The small town of Emery is located approximately 3 miles to the north of the Tract. Access to the mine area is provided via Interstate 70 (I-70), located 10 miles to the south of the Tract, and Utah State Highway 10 (SR 10), extending northward from I-70 along the western permit boundary of the Emery Mine. SR 10 continues in a northerly direction to the towns of Emery and Ferron. Refer to **Figure 1** for the location of the Tract. The location of the Tract in relationship to the Emery Mine, as well as the associated permit and Logical Mining Unit (LMU) boundaries, is shown on **Figure 2**.

The underground panels proposed for mining the Tract are shown on **Figure 3.** The surface effects of mining in the Tract would extend no further east than the 'No Subsidence' line, which is also shown on **Figure 3.**

Connected Actions

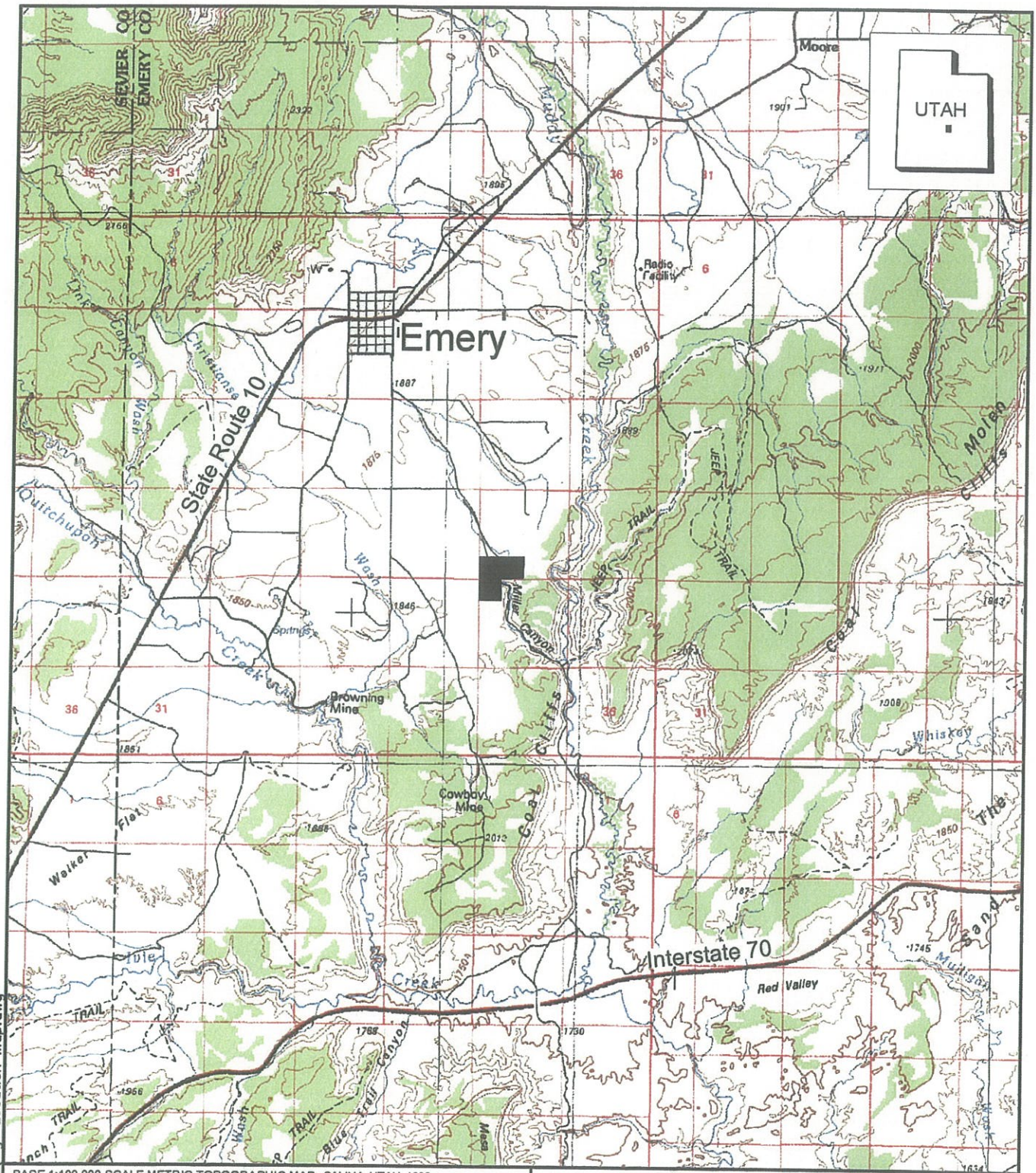
The leasing action described in Chapter 2 does not authorize surface disturbance. Therefore, environmental impacts in this EA are analyzed as connected actions. Connected actions are defined by the Council on Environmental Quality (CEQ 1508.25) as actions that: 1) automatically trigger other actions which may require environmental impact statements; 2) cannot or will not proceed unless other actions are taken previously or simultaneously; and 3) are interdependent parts of a larger action and depend on the larger action for their justification. According to 40 CFR 1508.25(a)(1) of NEPA, BLM is required to consider the subsequent actions – in this case, mining – that would be authorized by a lease as connected actions. Connected actions are the basis of the environmental analysis from which leasing decisions would be made.

The surface effects of coal mining would be the connected action described and analyzed in this EA. Underground coal mining can result in subsidence of overlying rock. Cracks from subsidence extend upwards, and can reach the surface.

If the leasing proposal is approved, Consol would have to submit a revision to the existing mining plan for the Emery Mine, which has been permitted by Utah Division of Oil, Gas & Mining (UDOGM). The Tract will be offered for lease by competitive sale and it is possible that a company other than Consol could obtain the right to lease and develop this Tract, thus negating the connected action.

1.3 Need for the Proposed Action

Consol has filed an application with the BLM pursuant to 43 CFR Subpart 3425, to lease Federal coal in the Tract. Consol owns and operates the Emery Mine, directly to the west of this Tract. Access to the coal in the Tract would be facilitated by the Emery Mine's 4 East Portal. Expansion of the Emery Mine into the Tract would provide Consol the opportunity to mine a small, but significant Federal coal resource. In the event this coal is not mined as part of the near-term mine plan, the resource will in all likelihood never be recovered due to isolation by old workings and oxidation/burn limits.



BASE 1:100,000-SCALE METRIC TOPOGRAPHIC MAP: SALINA, UTAH, 1980

EXPLANATION

Tract Boundary (T22S, R6E, Sections 23 and 26, Emery County, Utah)

1 0 1 2 3 4 KILOMETERS

1 0 1 2 MILES

N

CONSOL ENERGY

MILLER CANYON TRACT EA

FIGURE 1
LOCATION MAP

jbr environmental consultants, inc.

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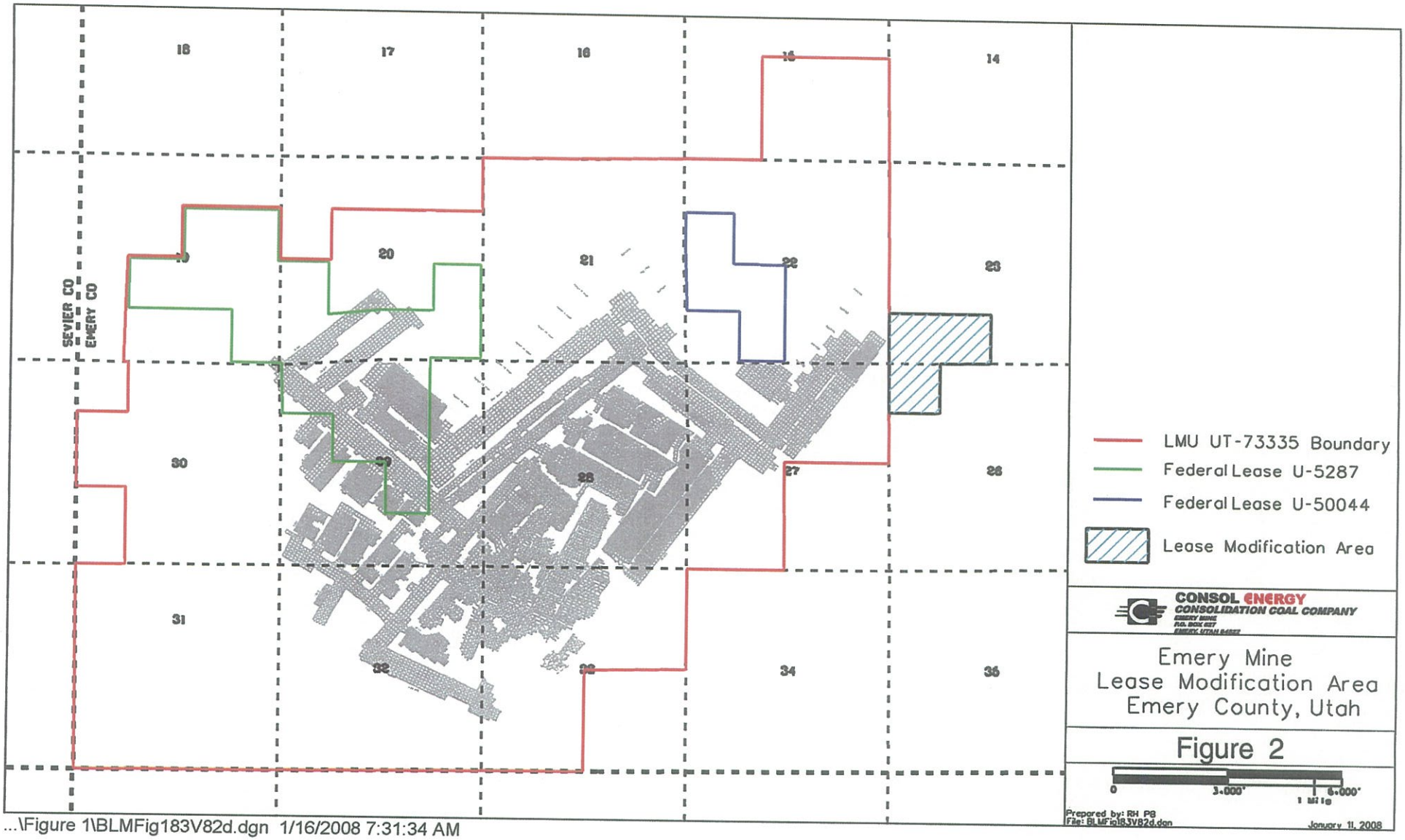
drawings\Consol Miller Canyon\Fig1 Location Map.dwg



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The need for this Federal leasing action to develop coal resources is to further the economic viability of Castledale, Ferron, Emery County and surrounding counties, and to help meet the growing energy demands of the nation.

1.4 Purpose(s) of the Proposed Action

The purpose of the Project is to continue the existing coal mining operations at Consol's Emery Mine by expanding into the adjacent Tract. Development of the coal resource associated with this Lease by Application (LBA) from the adjacent workings would assure the maximum economic recovery of this federal coal resource, as well as the Emery Mine site.

BLM is considering approval of leasing and private production from federal coal leases because the activity is an integral part of BLM's coal leasing program under the authority of the Mineral Leasing Act of 1920, as amended by the Federal Land Policy and Management Act of 1976. Additionally, coal exploration and development is recognized as an appropriate use of public lands according to the Price RMP (2008a).

1.5 Conformance with BLM Land Use Plan(s)

This EA was written to comply with BLM regulations for mining activities on public lands under the General Mining Law of 1872, subject to compliance with the Federal Land Policy and Management Act (FLPMA), which is implemented through surface management regulations (43 Code of Federal Regulations [CFR] 3809) as mandated by the Council of Environmental Quality Regulations (40 CFR 1500-1508) and the BLM NEPA Handbook (BLM 2008b).

The Proposed Action and Alternatives described in Section 2.0 are in conformance with the Price RMP (2008a) and are consistent with federal, state, and local laws, regulations, and plans. Although this specific leasing and mining action is not mentioned in the RMP, the development of this coal resource is supported by the Price RMP Minerals and Energy Resources objective: "to maintain coal leasing, exploration, and development within the planning area while minimizing impacts to other resource values", as stated on page 126 (BLM 2008a). In addition, the Project conforms to management guidance for riparian zones overlying the Emery coal field, such riparian areas are designated as no-surface-occupancy areas.

1.6 Relationship to Statutes, Regulations, or other Plans

The Project would comply with all other applicable Federal and State of Utah statutes and regulations, agency policy, and local ordinances.

Federal Compliance:

Clean Air Act (42 U.S.C. 1857 et seq.), as amended and recodified (42 U.S.C. 7401 et seq.). *Compliance*. The proposed project is not expected to violate any Federal or State air quality standards, or hinder the attainment of air quality objectives in the local air basin. The BLM has

determined that the proposed project would have no significant adverse effects on the future air quality of the area and is in compliance with this act.

Clean Water Act (33 U.S.C. 1251 et seq.). *Compliance.* Miller Canyon would be considered to be a jurisdictional Waters of the U.S. and thus compliance with the Clean Water Act would be required. The project would require the continued discharge of intercepted groundwater as a point source discharge into Waters of the U.S., however the discharge would be outside of the Tract, and commingled with existing discharges from the Emery Mine. The applicant has obtained a Utah Pollutant Discharge Elimination System (UPDES) permit to regulate this discharge as well as any storm water runoff from the existing Emery Mine site. As mandated by this permit, a Storm Water Pollution Prevention Plan (SWPPP) has been developed prior to issuing the UPDES permit and is being followed at the Emery Mine site. No new surface disturbance is anticipated for the Tract.

Endangered Species Act (16 U.S.C. 1531 et seq.). *Compliance.* Consultation with USFWS was not undertaken or deemed necessary for this Project as no federally listed species or designated Critical Habitats occur within the Tract would be impacted by the Project.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Compliance.* The order directs all Federal agencies to identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The proposed project would benefit the general public by helping to ensure local jobs and the nation's energy supply. In addition, all residents have the opportunity to participate in public meetings and comment on proposed plans.

Migratory Bird Treaty Act (16 U.S.C. 703 et seq.). *Compliance.* Miller Canyon itself provides limited habitat for migratory birds. No vegetation or habitat would be directly removed from the Tract and no take of migratory birds would occur as a result of the project. Riparian vegetation that has been supported largely by flood irrigation may be lost along Miller Canyon partially as a result of subsidence, although this occurrence is also likely to occur in the near future anyway due to a restructuring of the regional irrigation system from flood irrigation to sprinkler systems (see **Section 3.3.1**).

National Environmental Policy Act (42 U.S.C. 4321 et seq.). *Partial Compliance.* The comments and issues identified by the public during review of this draft EA will be analyzed and addressed as appropriate. The final EA will include comments and responses resulting from the public review.

National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.), Protection of Historic Properties (36 CFR 800). *Compliance.* The project as planned is in compliance with Section 106 of the National Historic Preservation Act. Adverse effects to the National Register eligible sites will be mitigated. Any cultural, historical, or prehistoric resources inadvertently discovered, would be coordinated with BLM and the State Historic Preservation Office (SHPO) and inspected by a professionally trained archeologist. In addition, the UDOGM permitting process fully evaluates impacts and needed mitigation for cultural resources.

Rangeland Health Standards as developed by the Secretary of the Interior on February 22, 1995 will be met for the Tract. Watersheds will be in maintained in proper functioning physical condition. Ecological processes will be maintained to support biotic populations and communities. Water quality will comply with Utah water quality standards. Habitats of federal threatened and endangered species, federal proposed, category 1 and 2 federal candidate and other special status species will be restored or maintained.

Native American Trust Resource Policy standards are presented in the Department of the Interior Comprehensive Trust Management Plan dated March 28, 2003. There are no coal lands within the jurisdiction of the BLM's Price Field Office for which the BLM is the trustee.

Federal Mine Safety and Health Act of 1977. The Emery Mine is in compliance with Mine Safety and Health Act (MSHA) requirements.

State and Local Approvals:

Utah Division of Oil, Gas and Mining. The Emery Mine was assigned permit number ACT/015/015 by the UDOGM.

Native American Consultation. A letter was sent to appropriate tribes to inform them of the Project and allow the tribes to discuss their issues concerning the Proposed Action prior to Project implementation. No response from the tribes has been received to date.

Emery County General Plan (1999). Emery County feels that public land should be managed under the "multiple-use and sustained yield" concept, which includes mining. To help make decisions regarding the management and use of natural resources in Emery County, the County has established a series of Memoranda of Understanding between Emery County and the Bureau of Land Management, among other agencies (Emery County 1999: Position Statement, Multiple Use). In general, the County recognizes the necessity of mining as its economic base.

1.7 Identification of Issues

On April 8, 2008 and May 21, 2008, meetings were held at the BLM Price Field Office with Consol, BLM resource specialists, and local officials and stakeholders to discuss the Project and any anticipated resource concerns. In addition, several BLM resource specialists toured the Miller Tract on May 21, 2008 and others subsequently visited the site on June 4, 2008.

Public scoping for the project was conducted via the Environmental Notification Bulletin Board (ENBB). A brief description of the project was posted on October 15, 2008. No communications have thus far been received as a result of this posting.

1.7.1 Resources Dismissed from Additional Analysis

Several resources were dismissed from further analysis in this EA. The list of resources, and the rationale for dismissing them, is included as Appendix A.

1.7.2 Issues Carried Forward for Analysis

The following issues and concerns were raised during scoping meetings.

- The Miller Canyon County Road extends through the Tract (County Road 912), near the eastern extent of the mineable portion of the reserve.
- Subsidence caused by mining could impact surface resources, including grazing allotments, soils, water, vegetation, and wildlife.

Based on the Price Field Office's Interdisciplinary Team Analysis and public scoping, the following issues are carried forward for analysis in this EA:

1.7.2.1 Water Resources

- The hydrologic system, both surface and groundwater, could be altered by subsidence and/or by mine dewatering. Surface water conveyances, including Miller Canyon and numerous agricultural ditches, could be physically altered by subsidence if elevation differentials result in grade changes and upland runoff patterns could be similarly altered. Subsidence-caused tension cracks could also result in loss of flow to or within these conveyances.
- Mining could intercept groundwater from the Ferron Sandstone aquifer, and the consequent dewatering could lower the potentiometric surface within and near the mined area. Groundwater flow from a small spring located within the Tract could be diminished or eliminated due to either subsidence or mine dewatering.

1.7.2.2 Farmlands (Prime and Unique)

- Within the 55 acres of the Tract where full extraction would occur, planned subsidence may locally affect surface soils through slight but non-uniform settling and development of tension cracks. Soil erosion has the potential for becoming accelerated in areas where surface runoff flows into the subsidence surface cracks.

1.7.2.3 Livestock Grazing

- The subsidence tension cracks could create difficult topography situations for cattle, possibly causing injuries if the tension cracks are deep. The area is currently being leased for grazing from both the BLM and Consol, and close to 100 cattle are utilizing the area. If the hydrology of the area is altered by subsidence or irrigation conversion, this could have an impact on water sources for grazing animals..

1.7.2.4 Wetlands/Riparian Zones

- If the underground mining intercepts the groundwater there could be impacts to wetlands and riparian zones within and downstream of the Tract. If the hydrology is altered and the wetland and riparian zones become too dry to support the vegetation, this would result in a loss of wetlands and riparian zone.

1.7.2.5 Fish and Wildlife, including special status species and migratory birds

- Two white-tailed prairie dog (*Cynomys leucurus*; Sensitive species) towns were identified in the Tract. The tension cracks that develop as a result of subsidence could alter the prairie dog burrows and adversely affect prairie dogs.

- If burrowing owls (*Athene cunicularia*; Sensitive species) are utilizing prairie dog burrows and tension cracks develop during the nesting season, there could be adverse impacts to burrowing owls.
- Riparian habitat for migratory birds and other wildlife that utilize seasonally wet areas may be diminished if subsidence leads to reduced water availability for these habitats in the Project Area (see **1.7.2.3**).

1.8 Summary

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, those elements of the human environment that could be affected by Project implementation. The Proposed Action and No Action alternatives are presented in **Chapter 2**. The potential environmental impacts or consequences resulting from the implementation of each alternative are then analyzed in **Chapter 4** for each of the identified issues.

2 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 Introduction

The objective for each alternative is to successfully lease and mine the Tract with the least amount of environmental damage while maximizing the amount of coal recovery. Each alternative was considered based on site-specific criteria. The leasing and associated mining of the Tract must be economically feasible, allow for the maximum recovery of the coal resources, and be environmentally sensitive, creating minimal or no environment impacts in relation to the BLM's 15 critical elements. Finally, the proposed actions must agree with the BLM's management plan for the area.

Based on the above-noted criteria, numerous alternatives were identified for consideration in this EA. However, after initial consideration, three of these alternatives were dismissed from further analysis (see **Section 2.4** below). The two remaining alternatives (designated as Alternatives A and B) were carried forward for further consideration. The Proposed Action, Alternative A, would be a continuation of Consol's current underground mining operations into the Tract. Alternative B, the No Action Alternative, is mandated by 40 CFR 1502.14(d) and provides the conceptual baseline for impacts.

The coal lease application will be processed and evaluated under the following authorities:

- Mineral Leasing Act of 1920, as amended (MLA);
- Federal Coal Leasing Amendments Act of 1976;
- Federal Land Policy and Management Act of 1977 (FLPMA);
- Surface Mining Control and Reclamation Act of 1977 (SMCRA);
- National Environmental Policy Act of 1969 (NEPA);
- Federal Regulations 43 CFR 3425.

The Office of Surface Mining Reclamation and Enforcement (OSM) has jurisdiction over any mining plan application that may result from the leasing decision made by the BLM. OSM is a cooperating agency in the preparation of this EA (40 CFR 1501.6). OSM has the responsibility, through SMCRA, to administer programs that regulate surface coal mining operations and surface effects of underground coal mining operations. In 1981, the UDOGM program to regulate surface coal mining and the surface effects of underground coal mining on non-federal lands within the state of Utah was approved by the Secretary of the Interior, pursuant to Section 503 of SMCRA. In 1987, UDOGM and the Secretary of the Interior entered into a cooperative agreement authorizing UDOGM to regulate surface coal mining operations and surface effects of underground coal mining on federal lands with the state, pursuant to Section 523(c) of SMCRA.

In Utah, federal coal leaseholders must submit permit application packages to OSM and UDOGM for proposed mining and reclamation activities on federal lands in the state. UDOGM

reviews the packages to ensure compliance of the permit application with permitting requirements and that the coal mining operation will meet the performance standards of the approved permanent program. If the permit package does comply, UDOGM will issue the applicant a permit to conduct coal mining activities as specified in the approved Mine Reclamation Plan (MRP).

OSM, BLM, and other federal agencies also review the permit application package to ensure that it complies with the terms of the coal lease, MLA, NEPA, and other federal laws and regulations. After the review, OSM can either recommend approval to the Assistant Secretary of Land and Minerals Management, approval with conditions, or disapproval of the MLA mining plan. Before the MLA mining plan can be approved, BLM and the surface managing agency (if other than BLM) must concur with OSM's recommendation.

Consol's Emery Mine has been expanded in the past to maximize the recovery of the coal reserve. Consol plans additional step-wise expansions to continue mining as long as it is economical, including an expansion associated with the mining of the Tract. The Emery Mine MRP, most recently revised in April, 2008, has been approved by UDOGM under Permit Number ACT/015/015. That MRP includes numerous environmental studies that were reviewed in the preparation of this EA.

When Consol's MRP was revised in March, 2007, it was predicted the Emery Mine would continue to produce coal from the IJ Zone until 2013. As the last of the coal reserves are mined from the existing owned and leased coal reserve, Consol plans to extend the life of the mine by leasing new coal associated with the Tract (which is located adjacent to the east of the current underground mining operations). By adding this Tract, Consol will economically maximize the amount of coal recovered at the Emery Mine.

Direct surface disturbances would be limited to areas of subsidence, thus reducing direct environmental impacts for most resources. The ability of the underground mining operation to recover the greatest amount of the coal reserve possible under the Proposed Action would represent a positive effect.

Because Alternative B (No Action) would not allow for the recovery of any of the coal reserves associated with the Tract, there would only be one issue: the unfulfilled objective of the BLM to maximize the recovery of coal reserves on federal lands. Denying the leasing proposal would leave a substantial amount of federal coal isolated within the Tract. Based on drill hole information from Consol, there are no other coal seams of economic importance within or adjacent to the Tract. As a result, the I seam reserves would more than likely be sterilized from future mine development and not recovered.

2.2 Alternative A – Proposed Action

Consol submitted a lease application to the BLM in February 2008, proposing to lease the Tract. The mineral estates within the boundaries of the Tract are owned by the United States of America and administered by BLM. A total of 80 surface acres within the 120-acre Tract are privately

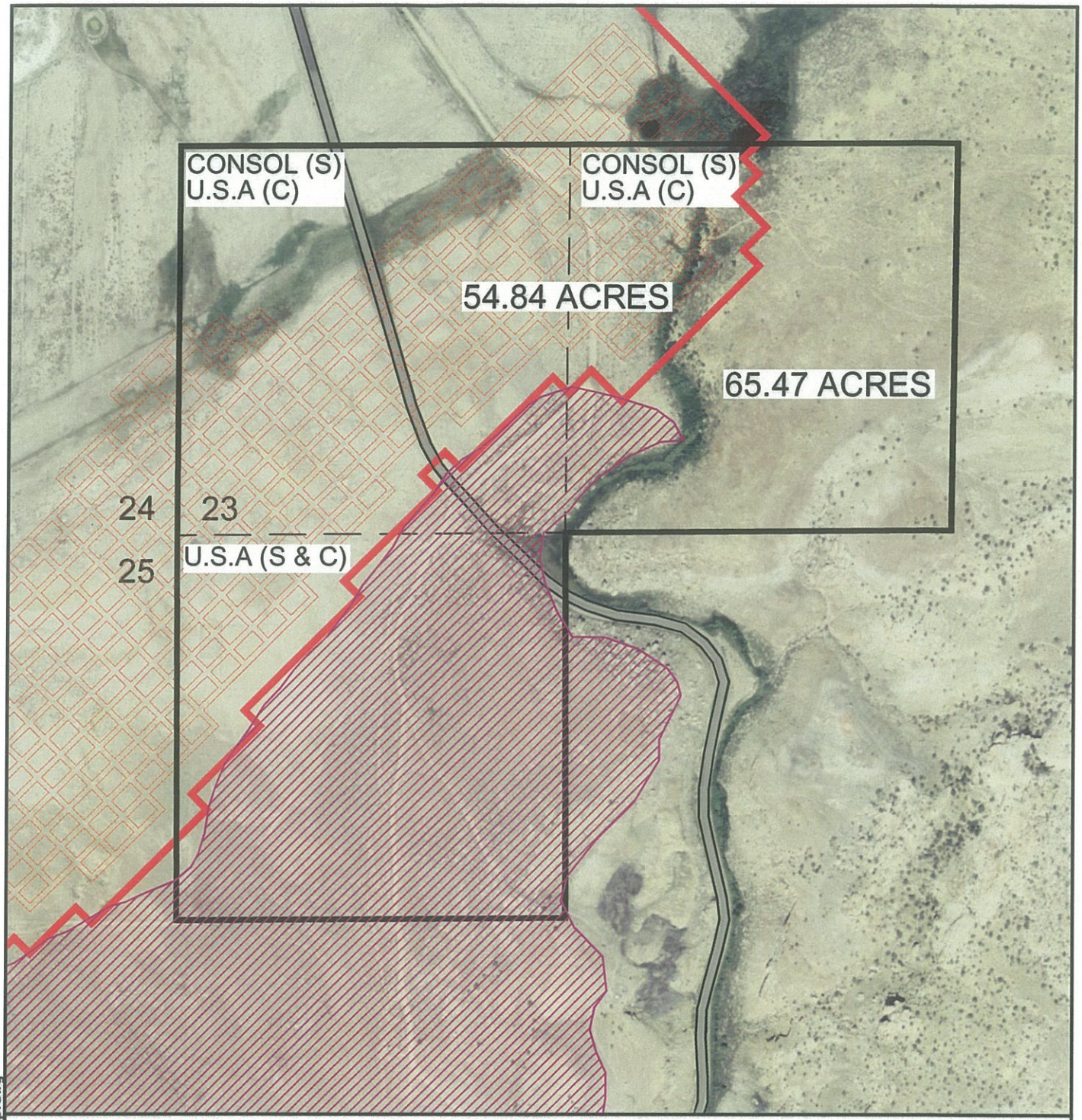
owned (split estate) by Consol, the remaining 40 surface acres are owned by the United States of America **(Figure 3)**.

If the application is approved, the lease would allow for the expansion of Consol's current underground coal operation at its Emery Mine, located approximately 65 miles south of Price, Utah. Under Alternative A, Consol proposes to expand the Emery Mine underground operations to the east of the existing mine area into the Tract, and extract the viable I seam coal reserves via the 00 North Panel. Based upon an assessment of these reserves by Consol, mining would occur beneath approximately 55 acres within the Tract; the remaining approximately 65 acres do not contain viable coal and would not be subject to mining. Approval of Alternative A would allow Consol to continue operations for an additional four to five months.

The underground mining operations at the existing Emery Mine are conducted in the I seam of the IJ Zone utilizing the room and pillar mining method. There are no surface mining operations at the mine site. Access to the existing underground workings is through the 4th East Portal. Several abandoned drift openings at the outcrop of the seam are located in the canyon near the office. These openings consisted of intake, return, and belt entries, and are currently sealed. The 4th East portal uses a ramp excavation down to the top of the IJ seam.

Development of the current mine area has been accomplished using seven or eight entry mains with entries on 80-foot centers and crosscuts on 100-foot centers. The submains for panel development typically use a five-entry system with similar entry centers. Panels are developed off the main or submains with a four- or five-entry system with rooms driven on either side of the development entries (room and pillar mining, unplanned subsidence). In some areas of the existing mine, Consol uses a partial extraction technique during retreat mining, which may leave the roof intact. Other areas of the existing mine have been designated as full extraction (planned subsidence).

Access to coal within the Tract will be via the existing 4th East Portal, located approximately one mile to the southwest of the Tract. Mining within approximately 55 acres of the Tract will be undertaken in the I seam using a continuous miner section. Federal reserves projected to be mined from the Tract within the I seam total approximately 444,000 recoverable tons (this total includes 25,000 tons of coal from full extraction mining under the Miller Canyon Road). Retreat mining, with planned subsidence, will occur within the Tract, yielding optimum recovery of the coal resource. Production from the mine, averaging about 1.2 MM tons per year, is marketed raw as a steam and industrial coal product for the steam, industrial, and coking coal markets.



BASE USGS 7.5' TOPOGRAPHIC MAP: EMERY EAST, 1968 PHOTOREVISED 1978, UTAH

EXPLANATION

- New Road
- Tract Boundary (T22S, R6E, Sections 23 and 26, Emery County, Utah)
- Non-subsidence Boudary
- Forecasted 00 North Panel
- Burn.Oxidized Area

500 0 500 Feet

N

CONSOL ENERGY

MILLER CANYON TRACT EA

FIGURE 3
SITE MAP

jbr environmental consultants, inc.

DESIGN BY	DRAWN BY	SCALE	DATE DRAWN	LAST REVISION DATE
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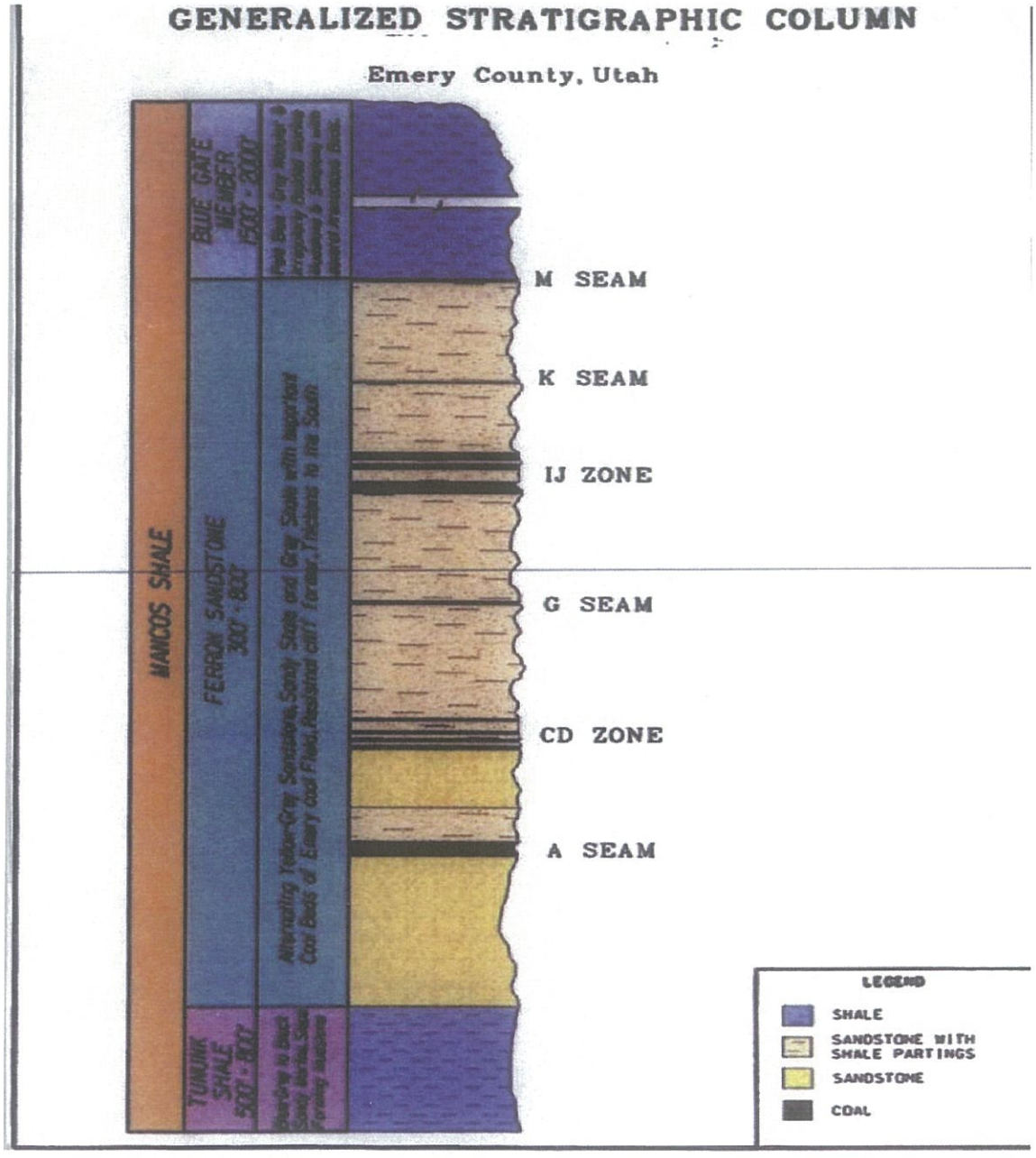
drawings\Consol Miller Canyon\Fig3 Site Map.dwg

Coal reserves are found within the Ferron Sandstone, a sequence of sandstone, siltstone, shale and coal that outcrop along the steep cliffs of Muddy Creek near the eastern boundary of the Tract. The Lower Ferron consists of shelf sandstone deposits, while the Upper Ferron consists of deltaic deposits. Although six coal seams have been identified as reaching economic thickness locally within the Ferron, only the I seam is considered underground mineable in the immediate area of the Tract. The I seam averages about 13 feet in thickness, within the mineable portions of the Tract. Oxidation of the I seam caused by past lightning-caused coal burns renders the eastern portion of the Tract unmineable.



All mining is conducted utilizing continuous miner sections, for advance and retreat, together with shuttle cars and belt haulage. Advance mining within the Tract will take an average of eight feet of coal, leaving two feet of floor coal to maintain stable floor conditions. When retreat mining, miner units will ramp up and down within the pillars to recover as much of the full seam as possible. A total recovery of 50 to 65 percent is typically achieved. The time frame anticipated to complete the coal recovery of both the federal and fee coal associated with the 00 North Panel is approximately one year.

The Miller Canyon County Road (County Road 912) extends through the Tract, near the eastern extent of the mineable portion of the reserve. The road is a designated emergency vehicle route for I-70. It is assumed full extraction mining will be conducted under this road and the area will be subsided in accordance with the lease document. The leasing action will include mitigation measures such as requiring Consol to consult with the County on alternative routes to divert traffic while the road is subsiding and prior to final road repair. If it is determined, based on the economics of the current coal market conditions, that it is not economically feasible to mine the coal under this road, Consol will leave pillars in place under the road and will ensure the entries are stable. Comprehensive engineering and technical documentation has been prepared to analyze the undermining of this road (Consolidation Coal Company 2008b, 2008c). The lease document will include specific details on how the mining will be conducted under this road. Consol has an agreement with Emery County that addresses interim and final road repair, should any be required.

The applicant will maintain the current standard of Best Management Practices (BMPs) that are in place at the Emery Mine. There will be a strict adherence to the SWPPP and other BMPs to minimize impacts to the environment. Consol will also amend its MRP as required by UDOGM; this permit requires strict adherence to UDOGM's environmental protection measures (e.g., UDOGM 2005).

2.3 Alternative B – No Action

In accordance with BLM guidelines (H-1790-1, Chapter V), this EA evaluates the No Action Alternative. The objective of the No Action Alternative is to describe the environmental consequences that would result if the need for the project was not met. The No Action Alternative forms the baseline environmental data from which the impacts of all other alternatives can be measured.

The selection of the No Action Alternative would be inconsistent with the BLM mission of multiple uses and the BLM policy of making public lands available for a variety of uses as long as those uses are conducted in an environmentally sound manner. Also, selection of this alternative would not allow for the maximum recovery of the coal resources by Consol. Under Alternative B, the Tract would not be offered for leasing at this time. This tract would remain unmined, but current operations at the Emery Mine would continue for approximately five more years until existing coal reserves are exhausted. Consol would not extend its Emery Mine

operations an additional four to five months and would not extract the estimated 444,000 recoverable tons of coal and would not submit to BLM the associated lease bonus payment and 8 percent production royalty.

2.4 Alternatives Considered, but Eliminated from Further Analysis

Three other alternatives were considered for analysis in this EA, but are not being carried forward for further analysis because they were determined to be not viable, as outlined below.

Addition of Mining Area to North

Consol considered mining the Tract as well as additional areas to the north of the Tract. The mining method would be consistent with Alternative A, but the area mined would be larger. As with Alternative A, no new surface facilities or surface disturbing activities would be required. Available drill hole information indicates that the coal reserves north of the Tract were less than nine feet thick. To utilize continuous miner sections as Consol proposes to use, the coal seam must be a minimum of nine feet thick. Thus, this Alternative was eliminated based on the inability to efficiently mine the additional area to the north of the Tract and will not be evaluated further in this EA.

Room & Pillar, Without Retreat Mining

Consol also considered -- but eliminated -- room and pillar mining, without removing additional coal through retreat mining. Although this mining method would reduce or eliminate subsidence and subsidence-related impacts, it would result in less than the maximum recovery of coal reserves, which would not be in the best interests of Consol or the BLM. Thus, this alternative will not be evaluated further in this EA.

Mine the Entire 120-acre Miller Canyon Tract

The consideration of mining and subsiding the entire 120-acre Miller Canyon Tract was proposed for purposes of analyzing the potential effects to the entire Tract. However, according to extensive drilling data, coal in the southeast corner of the Tract is burned, and therefore oxidized so as to be not commercially acceptable. Therefore, the coal resource in this area, although present, is already depleted. Mining this burned coal serves no purpose and is economically impractical, and therefore further consideration of this alternative is dismissed.

3 AFFECTED ENVIRONMENT

3.1 Introduction

This section describes the resources in the study area, as well as any effects of the alternatives on those resources. When necessary, mitigation measures are also proposed to avoid, reduce, minimize, or compensate for any significant effects.

3.2 General Setting

The Emery Mine is located in south-central Utah. The general area is classified climatically as a middle latitude dry climatic area or a highland continental desert and is semiarid (Western Regional Climate Center 2008). The average annual temperature is 46°F and the average annual precipitation is 7.6 inches. Aridity is due to the Tract's location within the rain shadow of the Wasatch Plateau to the west. There are approximately 130 frost-free days annually.

The Tract is about three miles south of the town of Emery and about seven miles southwest of the town of Moore. For a rural county, Emery County has a high standard of living and solid tax base that comes from an economy based on coal extraction, specifically high-paying jobs associated with coal mining and electrical power generation (Emery County 1999). The 8% production royalty on federal coal is split 50/50 with the state. The county in which the coal is mined receives most of the states share of this royalty; the same split is used with the bonus payment.

The Tract is located within the 1,590 square mile area that comprises the Muddy Creek drainage basin. Muddy Creek flows southwest to eventually converge with the Fremont River, a tributary to the Dirty Devil River that ultimately flows into the Colorado River. Miller Canyon, a tributary to Muddy Creek, is situated within the eastern portion of the Tract.

Surface elevations of the Tract range from approximately 6,080 feet to 6,160 feet above mean sea level. Topography of the Tract is generally flat and is transected near the center by the north-south trending Miller Canyon. Land use has been designated by BLM as multiple use and is currently used for range for domestic livestock and wildlife species.

Vegetation within the Tract is dominated by salt desert plant communities such as shadscale (*Atriplex confertifolia*) and greasewood (*Sarcobatus vermiculatus*), and also contains small, localized areas of sagebrush, saltgrass and other bottomland species where irrigation and natural drainage water collects. Open stands of pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) occur east of the Tract on sandstone outcrops and along escarpments adjacent to Muddy Creek.

3.3 Critical Elements of the Human Environment and Other Resources Brought Forward for Analysis

The following resources were identified above in **Section 1.7** as having the potential to be affected by the Project.

3.3.1 Water Resources

The Tract is bisected by the upper reaches of Miller Canyon (**Figure 4**). Miller Canyon joins Muddy Creek about one mile downstream of the Tract. Though most of the Tract is drained by Miller Canyon, runoff from the western part flows toward Christiansen Wash, which is also tributary to Muddy Creek via Quitchupah Creek. Muddy Creek and the Fremont River combine to form the Dirty Devil River before it joins the Colorado River.

Along a several-mile reach of Muddy Creek, beginning at the Emery Canal diversion (which often completely dewaters the channel) located about 15 miles northwest of the Tract, continuing downstream to include the reach of stream just east of the Tract, stream flows are generally supported by seepage and irrigation returns (Mundorff 1979). Within this reach of Muddy Creek, total dissolved solids (TDS) concentrations markedly increase. For example, TDS in samples collected by the US Geological Survey (USGS) during the 2005 and 2006 water years were consistently below 300 mg/L at the USGS Muddy Creek station upstream of Emery near the canal diversion, but were as high as 3,714 mg/L in Muddy Creek just below Miller Creek (USGS 2008). The increase is due to diversion of good quality water into the Emery Canal, interaction with the soluble marine deposits associated with Mancos Shale Formation outcrops, and contribution of irrigation-affected seepage and return flow. Miller Canyon itself conveys irrigation return flow, runoff from storms and snow melt, and discharge from a small spring. Each of these sources is discussed in more detail below.

Within the reach of Miller Canyon that flows through the Tract, irrigation return flow is seasonal, but of sufficient duration and volume to support a riparian corridor and to provide water for downstream stock uses. It appears to be the largest sustained contributor to Miller Canyon flow: a site visit on April 24, 2008, prior to the start of irrigation, documented an absence of stream flow in Miller Canyon upstream of contributions from a small spring (less than one gallon per minute) near the downstream end of the Tract; a repeat visit on June 4 documented irrigation flows (in excess of 100 gallons per minute) throughout the previously dry reach. Further, field notes from Consol personnel, who routinely visit the area to monitor flows at the spring, often indicate that the presence of irrigation water hinders their ability to measure spring discharge (personal communication, Peter Behling, Consol, April 28, 2008).

While the Emery area has been flood-irrigated for more than 100 years, the practice is likely to be modified in the near future, and this modification may have a direct bearing on future flows in Miller Canyon (unrelated to Consol's plan to mine the Tract). The Tract is within a larger area established by the USDA Natural Resource Conservation Service (NRCS) as the Muddy Creek Unit of the Colorado River Salinity Control Program. As with other salinity control units, this area was determined to be an area where salt load reduction was potentially economical. In October 2004, the NRCS (2004) finalized a plan to construct a new irrigation delivery system and implement an irrigation conversion project (from flood to sprinkler) on the Muddy Creek

Unit. Once implemented, this project will result in more efficient water use, which in turn tends to improve water quality by reducing dissolved salts. Irrigation conversion also generally reduces deep percolation, seepage, and excess water in return ditches. Once implemented on the fields upstream of the Tract, stream flows through Miller Canyon are likely to diminish. Those reduced flows, in turn, may result in a diminished riparian corridor and associated habitat. In fact, the NRCS's EA (NRCS 2004) recognizes that at least some of the seeps, wetlands, and riparian areas that have been artificially created over many years of inefficient irrigation practices in the Muddy Creek area are likely to be negatively impacted by the salinity control project.

Runoff from thunderstorms and seasonal snowmelt is another source that contributes stream flow to Miller Canyon. At Muddy Creek near I-70, the USGS (2008) attributed more than twice the amount of snowmelt runoff as compared to direct runoff during the 2005-2006 water years, but also notes the large temporal and spatial variability of flows in the Muddy Creek Basin. Snowmelt in Miller Canyon would likely peak in May or early June, and would typically contain very few dissolved solids. Late summer or fall thunderstorms produce most of the direct runoff, and this source is – by nature – infrequent and irregular. Channel morphology in Miller Canyon does not suggest that severe flash floods are common. As with most streams in the area, when the flow is comprised of high-intensity runoff from thunderstorms, sediment concentrations in Miller Canyon are likely to be elevated, and TDS concentrations are likely to be higher than during snowmelt-dominated flow events.

Due to a small, currently unmaintained earthen dike across the Miller Canyon channel at the upstream end of the Tract (**Figure 4**), both irrigation water and runoff are at least partially impounded. During the previously mentioned June 2008 site visit, seepage was occurring beneath the dam, and significant piping and interception of flows was occurring immediately downstream of it (which appears to be related to bedrock joints or fissures as the intercepted flows were observed to resurface well downstream of the dam). Several smaller impoundments have been excavated just upstream of the dam, within and north of the Tract on land owned by Consol but leased to an irrigator. These impoundments were apparently constructed to compensate for the dam's only partially functional ability to store water. The stored water is apparently used to supply drinking water for the lessee's livestock.

As mentioned above, a small spring discharges groundwater along the west bank of Miller Canyon near the downstream Tract boundary (**Figure 4**). This spring is not documented on USGS mapping or in other published sources, but was identified a number of years ago in association with the Emery Mine's baseline data gathering. Named Christiansen Spring (or SP-15), Consol monitors this source quarterly. According to Consol's MRP (Consolidation Coal Company 2008a), the spring discharges from the upper zone of the Ferron Sandstone Member of the Mancos Shale. Consol has a water right (#94-92) that was originally associated with this spring, and which now includes stockwatering rights for a reach upstream of the spring.

Downstream of the spring and the Tract, continuing through Miller Canyon to its confluence with Muddy Creek, BLM has an in-stream point-to-point water right (#94-1716) for stock watering

and livestock uses (**Figure 3**). As with the upstream reach of Miller Canyon, flows in this segment of the canyon are most likely supported largely by irrigation return flows.

The Ferron Sandstone is considered to be the primary bedrock aquifer within the general area encompassing the Tract. Located between the more impermeable shales of the Blue Gate (overlying) and the Tununk (underlying) members of the Mancos Shale, the aquifer associated with the Ferron Sandstone is commonly divided into a lower, middle, and an upper aquifer unit. The minable coal seam is located between the middle and upper divisions. The Emery Mine intercepts groundwater from this aquifer, and continually discharges the majority of the intercepted water to Quitchupah Creek. In 2006, the mine discharged this water at an average rate of about 527 gallons per minute; its TDS averaged approximately 3,480 mg/L (EarthFax Engineering, Inc., 2008). The discharge is permitted by the Utah Division of Water Quality (UDWQ) under the Utah Pollutant Discharge Elimination System (UPDES) program. Consol owns several water rights for groundwater, and uses this water for industrial and agricultural purposes.

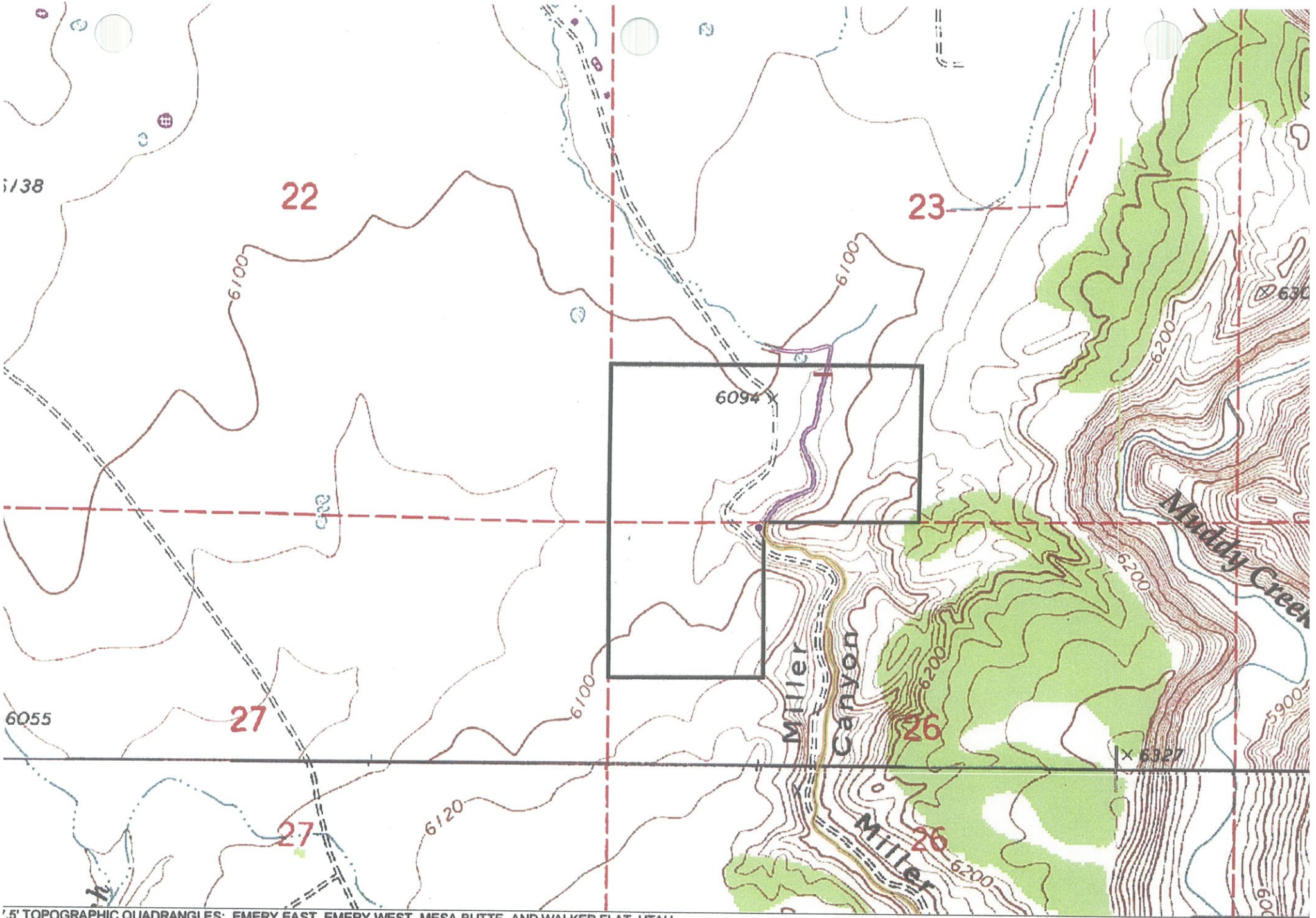
The Ferron Sandstone aquifer is primarily recharged from the high-elevation Wasatch Plateau to the west, and is under artesian pressure in the vicinity of the Emery Mine. Within the Tract, the Ferron Sandstone is the uppermost bedrock unit, and it is exposed as outcrop along portions of Miller Canyon, including at the location of the above-described spring. Generally though, within and near the outcrop area the Ferron is not saturated. By intercepting and continually discharging the intercepted water, mining has lowered the potentiometric surface of the Ferron, (primarily the upper Ferron zone and to a lesser extent the middle and lower zones) (Consolidation Coal Company 2008b). Once mining ceases, the trough of depression caused by past and currently approved mining activities will gradually diminish and pre-mining groundwater levels will eventually be approximately reestablished.

The water quality of the Ferron varies with depth and with distance down gradient from the recharge area. The TDS concentration of groundwater in the upper Ferron Sandstone averages about 1,600 mg/L, though in the vicinity of the Emery Mine is locally higher, likely due to interaction between the Ferron and the overlying shales.

Neither the surface- nor groundwater resources in the vicinity of the Tract supply public or private drinking water systems. This is largely due to a lack of need in this sparsely populated area, but in part is due to high TDS concentrations.

3.3.2 Farmlands (Prime and Unique)

The Natural Resource Conservation Service (NRCS) conducted an assessment of prime farmlands within the Tract (Fish 2008). The NRCS assessment determined that soils identified as soil mapping unit BIB and irrigated, meet the criteria for prime farmlands. Presently 1.7 acres of soil map unit BIB within the Tract are being irrigated. An additional 7.4 acres of soil map unit BIB show evidence of having been farmed and possibly irrigated at some time in the past, but not farmed or irrigated at this time (refer to **Figure 5** and **Table 3-1**).



.5' TOPOGRAPHIC QUADRANGLES: EMERY EAST, EMERY WEST, MESA BUTTE, AND WALKER FLAT, UTAH

2S, R6E, Sections 23 and 26, Emery County, Utah)

Field inspection of the Tract determined that 0.3 acres of soil map unit PeC2 is currently being farmed and irrigated; refer to **Table 3-1** below. This small piece of irrigated PeC2 is upslope of the 1.7 acres of BIB being irrigated, for a total of 2.0 acres under irrigation.

Historical evidence indicates that 3.4 acres of other soil map units have been farmed and possibly irrigated at some time. This includes: 1.1 acres of map unit Hs; 1.5 acres of map unit KIB; 0.4 acres of map unit PCE2; and 0.4 acres of map unit PeC2.

Table 3-1. Areas that are either presently farmed and irrigated or were historically farmed.

Map Unit Symbol	Map Unit Name	Historically Farmed, but not Presently Farmed	Presently Farmed and Irrigated
		Acres	Acres
BIB	Billings silty clay loam, 1 to 3 percent slopes	7.4	1.7
Hs	Hunting loam, moderately saline, 1 to 3 percent slopes	1.1	
KIB	Killpack clay loam, 1 to 3 percent slopes	1.5	
PCE2	Persayo-Chipeta association, 3 to 20 percent slopes	0.4	
PeC2	Penner loam, 3 to 6 percent slopes	0.4	0.3
Total		**10.8**	**2.0**

Hydric Soil Conditions

Hunting and Rafael soil series have hydric soil conditions, but are of limited extent within the Tract. Hunting soils were mapped at the southwest end of the area identified as previously farmed (map unit Hs, 1.1 acres). The hydric conditions described by the NRCS in the Hunting soils were likely the result of irrigation when the adjacent soils were farmed; these soils may not have hydric conditions at the present time. Rafael soils were mapped along Miller Canyon Creek (map unit Ra, 7.1 acres). The Ra map unit delineation is larger than the actual area of Rafael soils and includes rock outcrop cliffs, shallow soils on structural benches above the creek, and the paved roadway.

Soil Erosion Potential

The dominant soil map units in the Tract (NRCS 2007) are: Hideout-Gerst-Anasazi association, 3 to 30 percent slopes (254); Persayo-Chipeta association, 3 to 20 percent slopes (PCE2); and Molen-Lazear-Gerst complex, 2 to 8 percent slopes (SNC). The other nine soil map units comprise less than ten percent of the Tract, each.

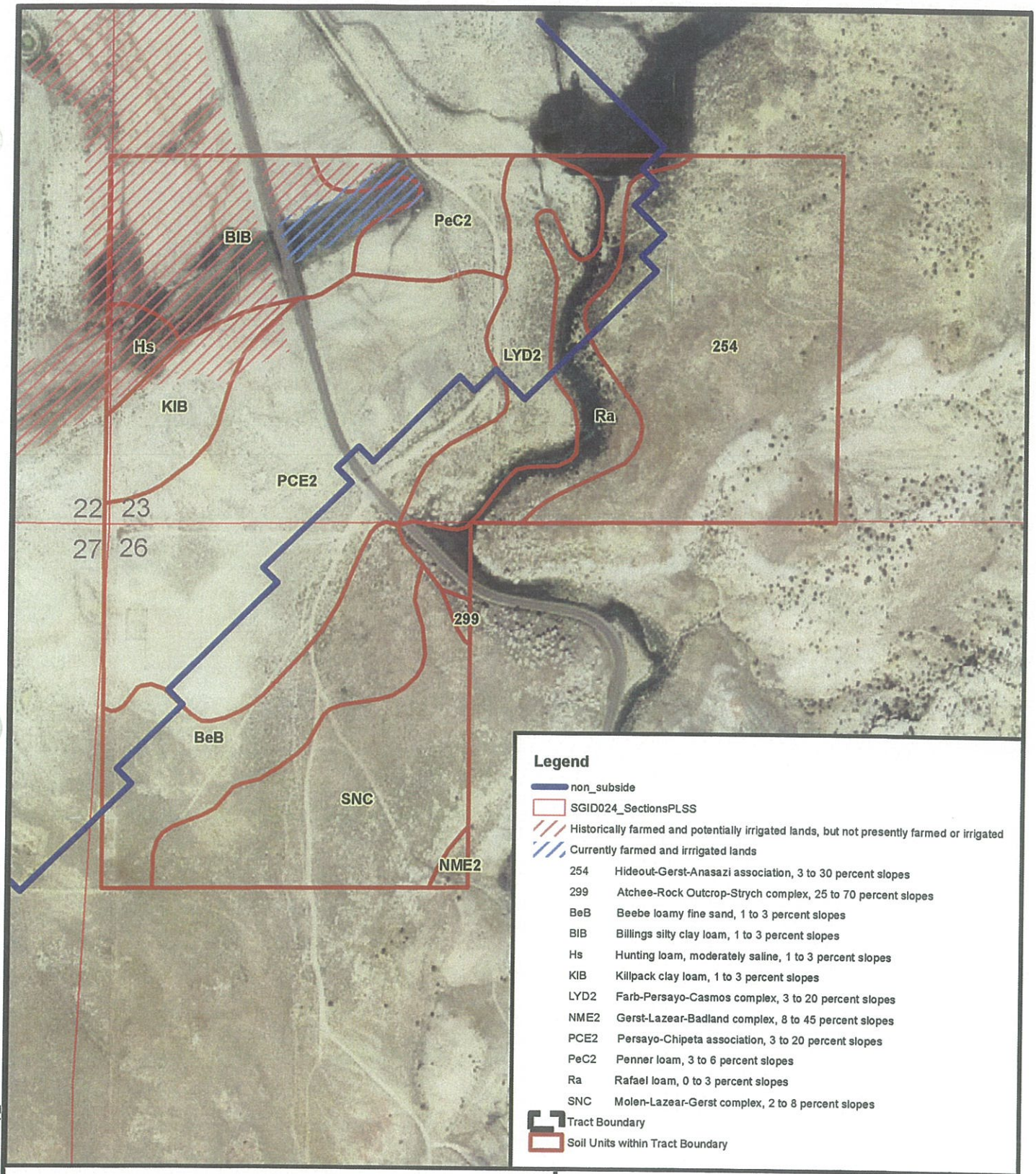
Table 3-2 contains the soil erosion potential ratings by soil map unit (NRCS 2007). Six of the twelve soil map units have K factors by the NRCS estimated that are within UDOGM's "Good" category; one is in the "Fair" category; and five are in the "Poor" category (UDOGM 2005). Soil map units that are within the UDOGM "Poor" category are susceptible to sheet and rill erosion (NRCS 2007).

Soil map units LYD2, NME2, PCE2, and Ra have a high runoff potential based on the soil hydrologic group (NRCS 2007).

Table 3-2. Soil erosion factors determined by soil map unit (NRCS 2007).

Map Unit Symbol	K Factor[1]	K Factor Suitability[2]	Wind Erodibility Index Group[3]	Wind Erodibility Index Rating[4]	Hydrologic Soil Group[5]
254	0.15	Good	5	56	D
299	0.10	Good	6	48	D
BeB	0.43	Poor	3	86	B
BIB	0.37	Fair	4L	86	B
Hs	0.43	Poor	4L	86	C
KIB	0.43	Poor	4L	86	C
LYD2	0.15	Good	5	56	D
NME2	0.10	Good	6	48	D
PCE2	0.49	Poor	4L	86	D
PeC2	0.49	Poor	4L	86	B
Ra	0.32	Good	8	0	D
SNC	0.28	Good	3	86	C

1. K factor value taken estimated by NRCS (NRCS 2007).
2. K factor suitability is based Utah DOGM's "Guidelines for Management of Topsoil and Overburden" (UDOGM 2005).
3. Wind erodibility index group range from 1 to 8 with group 1 being most susceptible to wind erosion and group 8 are the least susceptible (NRCS 2007).
4. Wind erodibility index rating is estimated in tons per acre per year (NRCS 2007).
5. Hydrologic soil group determined by NRCS are based on runoff potential. Group designation is based on the potential infiltration rate: Group A has a high infiltration rate and low runoff potential; Group B has a moderate infiltration rate; Group B has a slow infiltration rate; and Group D has a very slow infiltration rate and high runoff potential (NRCS 2007).



Legend

- non_subside
- SGID024_SectionsPLSS
- Historically farmed and potentially irrigated lands, but not presently farmed or irrigated
- Currently farmed and irrigated lands

254	Hideout-Gerst-Anasazi association, 3 to 30 percent slopes
299	Atchee-Rock Outcrop-Strych complex, 25 to 70 percent slopes
BeB	Beebe loamy fine sand, 1 to 3 percent slopes
BIB	Billings silty clay loam, 1 to 3 percent slopes
Hs	Hunting loam, moderately saline, 1 to 3 percent slopes
KIB	Killpack clay loam, 1 to 3 percent slopes
LYD2	Farb-Persayo-Casmos complex, 3 to 20 percent slopes
NME2	Gerst-Lazear-Badland complex, 8 to 45 percent slopes
PCE2	Persayo-Chipeta association, 3 to 20 percent slopes
PeC2	Penner loam, 3 to 6 percent slopes
Ra	Rafael loam, 0 to 3 percent slopes
SNC	Molen-Lazear-Gerst complex, 2 to 8 percent slopes

- Tract Boundary
- Soil Units within Tract Boundary

NAIP 2006 Quarter Quad imagery: Emery East SW
NRCS Soil Survey: ut623
PLSS: Salt Lake Meridan, Township 22 South, Range 6 East

500 0 500 Feet

N

CONSOL ENERGY
MILLER CANYON TRACT EA

FIGURE 5
SOILS MAP

jbr environmental consultants, Inc.

DESIGN BY	DRAWN BY	SCALE	DATE DRAWN	LAST REVISION DATE
RL	CP	1:6,000	7/21/08	-

drawings\...\Miller Canyon\Fig5 Soils Map_r1.mxd

3.3.3 Livestock Grazing

Grazing rights have been granted for the grazing of cattle on both the Consol and BLM land holdings. Approximately 2.0 acres of the Tract is currently irrigated and farmed. Currently, less than 100 head of cattle graze the Tract as well as an adjacent area owned by Consol for two months out of the year (personal communication, Morris Sorenson, May 21, 2008). The BLM area is grazed for 45 days at a time. According to Mr. Sorenson (personal communication, Morris Sorenson, May 21, 2008) cattle are grazing unaffected on an area adjacent to the Tract that has experienced subsidence.

Approximately seven acres of the pasture lands contain evidence that they were once irrigated, but are currently being utilized as dry-land pastures (Mt. Nebo Scientific 2008a).

Regarding stock watering, impoundments in Miller Canyon to contain irrigation runoff and other surface water have been constructed to store water, which is used to supply drinking water for livestock. Consol has a water right (#94-92) to Christensen Spring that was originally associated with the spring, and which now includes stockwatering rights for a reach upstream of the spring (see **Section 3.3.1**). Refer to the water section (**3.3.1**) for information on the earthen dam within the Tract.

3.3.4 Wetlands/Riparian Zones

There are two areas that contain wetland or riparian characteristics within the Tract. The first area is within dry pastureland in the northwest corner of the Tract. This area is made up of saltgrass (*Distichlis spicata*) vegetation and some greasewood. The water that flows in this area is derived from both natural groundwater and surface water as well as runoff from irrigated pasture land upgradient. Regarding hydric soils, Hunting soils (hydric) were mapped at the southwest end of the area identified as previously farmed (map unit Hs, 1.1 acres; NRCS 2007). The hydric conditions described by the NRCS in the Hunting soils were likely the result of irrigation when the adjacent soils were farmed; these soils may not have Hydric conditions at the present time.

There is also a riparian community associated with Miller Canyon Creek through the east-central portion of the Tract that contains Tamarisk (*Tamarix* sp.), saltgrass, wiregrass (*Aristida stricta*), greasewood, rushes (*Juncus* spp.) and sedges (*Carex* spp.; Mt. Nebo Scientific 2008a). Rafael soils (hydric) were mapped along Miller Canyon Creek (map unit Ra, 7.1 acres). The Ra map unit delineation is larger than the actual area of Rafael soils and includes rock outcrop cliffs, shallow soils on structural benches above the creek, and the paved roadway.

Both riparian/wetland areas are currently enlarged by many years of inefficient (flood) irrigation practices in the Muddy Creek area and thus in part have been artificially created as flooding has augmented the natural hydrology and drainage of Miller Canyon (NRCS 2004). Regardless of the proposed action these riparian areas are expected to diminish as the planned sprinkler irrigation system replaces the current regime (NRCS 2004).

3.3.5 Fish and Wildlife, including special status species and migratory birds

Wildlife studies completed within and adjacent to the Tract as part of the larger Emery Mine and Hidden Valley Mine permit applications identified the presence of mule deer, cottontail, jackrabbit, squirrel, chipmunk, mice, vole, rat, fox, porcupine, coyote, weasel, skunk, badger and bobcat in the area. Available data from the Utah Division of Wildlife Resources indicates the Miller Tract is not crucial or substantial habitat for any big game animals (i.e., mule deer, rocky mountain elk, pronghorn, or rocky mountain bighorn sheep). Regarding fish, no perennial drainages occur within the Tract, as the Miller Canyon Creek is intermittent. Water flow down Miller Canyon is generally not sufficient to support fish and flooding does not occur regularly enough to provide a feasible connection to fisheries in other waterways such as Muddy Creek.

Sensitive species

Two sensitive species were identified within the Tract during general wildlife surveys: burrowing owl and white-tailed prairie dog. These species are described below. Information on dedicated surveys was taken directly from field survey reports (Mt. Nebo Scientific 2008b for burrowing owl; Mt. Nebo Scientific 2008c for white-tailed prairie dog).

Burrowing owls (*Athene cunicularia*) are listed on Utah's Sensitive Species list as a species of concern. Burrowing owls can be found in annual and perennial grasslands as well as deserts and shrublands such as those areas near the Emery Mine site. In the salt deserts of Utah they are most often associated with prairie-dog towns where they use their burrows for protection, shelter and nesting. They typically prefer areas where the vegetative canopy cover is less than 30 percent. Surveys for burrowing owls were conducted on one day from one hour before until two hours after sunrise (or from 6 am to 9 am), and on the subsequent day from two hours before until one hour after sunset (or from 6 pm to 9 pm). One burrowing owl was observed during the evening. The owl was seen exiting one burrow within one of the major prairie-dog colonies located within the surface boundaries of the Miller Tract of the Emery Mine.

White-tailed prairie dogs (*Cynomys leucurus*) are listed on Utah's Sensitive Species list as a species of concern. The white-tailed prairie dog is one of three prairie dog species found in Utah, and similar to other prairie dogs, this species forms colonies and spends much of its time in underground burrows. Utah prairie dogs often hibernate during the winter and breed in the spring. Young prairie dogs can be seen above ground in early June. The prairie dog diets consist mainly of grasses and bulbs (UNHP 2008). Once white-tailed prairie dogs were confirmed within the Project Area, a survey was conducted by setting up stations near the colonies to allow the use of binoculars and spotting scopes. Surveys were conducted in the morning and evening of 2 June 2008. The field survey verified that white-tailed prairie-dogs were present, active, relatively abundant and reproducing in Miller Creek Tract colonies. Two towns (burrow clusters) were observed in Section 23, on the west side of Miller Canyon road, each of which supported approximately 30 burrows, half of which were active. Scattered burrows were also present in other areas (outside the main towns) throughout the Tract. On 2 June 2008, 10-28 white-tailed prairie dogs of varying ages were observed active on the surface.

Migratory birds

It is possible that migratory birds may use the riparian or shrubland areas within or near the Tract for nesting. During visits to the Tract in April of 2008, no migratory birds were noted in the area and the Tract generally provides only marginally suitable habitat. If migratory birds used the Tract area, they would most likely occur within the riparian corridor in Miller Canyon. Raptor studies at the Emery Mine indicate a low likelihood for raptor presence within the Tract. A 2007 survey conducted by the Utah Department of Natural Resources (UDNR) identified a Golden Eagle nest within one mile of the Tract (UDNR 2007). At the time of the survey the nest was tended, but did not have eggs or young. No other raptor nests were identified on or within a mile radius of the Tract.

4 ENVIRONMENTAL IMPACTS

4.1 Introduction

This EA must identify the known and predicted effects that are related to the issues (40 CFR 1500.4(c), 40 CFR 1500.4 (g), 40 CFR 1500.5(d), and 40 CFR 1502.16). An issue describes an environmental problem or relation between a resource and an action. An effects analysis predicts the degree to which the resource would be affected upon implementation of an action (BLM 2008b). This chapter will analyze relevant short- and long-term effects as they relate to the proposed action. To further explain how resources will be affected by the implementation of the proposed project the focus of the discussion of effects will be on direct and indirect impacts; context and intensity; and duration.

Because the Project is a continuation of the existing underground mining operation, few issues and resources will be analyzed in this chapter. No new areas of surface disturbance are planned.

4.2 Direct/Indirect Impacts

EAs must analyze and describe the direct effects and indirect effects of the proposed action and the alternatives on the quality of the human environment (40 CFR 1508.8). Direct effects are those effects that are "caused by the proposed action and occur at the same time and place" (40 CFR 1508.8(a)). Indirect effects are effects caused by the proposed action, but occuring "later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR 1508.8(b)).

4.2.1 Alternative A - Proposed Action

4.2.1.1 Water Resources

No surface disturbances (other than indirect subsidence-caused settling) would occur under the proposed action, thus the accelerated runoff and erosion typical of disturbed areas would not occur. However, within the 55 acres of the Tract where full extraction would occur, planned subsidence may locally alter drainage patterns through slight but non-uniform settling and development of tension cracks. This could change infiltration, ponding, erosion/deposition, and runoff characteristics on a very small and local scale but would not be expected to have off-site impacts or otherwise affect either the Miller Canyon or Christiansen Wash streamflow or sediment regimes. Over time, tension cracks would be likely to fill and seal, particularly in the areas where soils have substantial clay components and overly shale parent materials (soil mapping units PCE2 and NME2 – **Figure 5**). Similarly, as small depressions collect runoff, conveyed sediments would deposit and over time these depressions would fill, causing local topography to reach pre-subsidence uniformity.

Because the proposed action would simply be an extension of mining, there would be no change to the existing condition regarding other potential surface effects (off of the Tract) such

as those related to coal transport, hydrocarbon spillage, surface infrastructure, discharge of intercepted groundwater, etc. Consol would continue to monitor surface and groundwater impacts related to its existing operations to ensure that there are no material damages to the hydrologic balance as per the Emery Mine's already approved MRP.

As mining expands into the Tract, groundwater contained in the Ferron Sandstone would continue to be intercepted. Given the small area (55 acres) of undermining associated with the Tract, as compared to the past, current, and already approved mining, the additional quantity of intercepted groundwater associated with the Emery Mine is not expected to substantially change. Similarly, the discharge of that intercepted groundwater water to Quitchupah Creek would continue, as allowed by the current UPDES Permit, at similar rates and water quality as if the Tract were not mined. In addition, there would be no change in the consumptive use of this groundwater (due to entrainment in the coal, dust control in-mine and on the surface, and evaporative losses due to mine ventilation).

Under existing approvals that are irrespective of the proposed action being evaluated here, it has been predicted that Christiansen Spring (also known as SP-15) will be within the cone of depression due to mining and resultant dewatering of the upper Ferron Sandstone aquifer. Groundwater modeling presented in Consol's approved MRP (Consolidation Coal Company 2008) suggests that the potentiometric surface in the vicinity of the spring will temporarily decline about 24 feet; this decline can be expected to affect the discharge of Ferron Sandstone groundwater at Christiansen Spring. As overall premining groundwater levels reestablish after mining is complete, the spring can be expected to again discharge this groundwater. Mining the Tract would not alter either the diminishment or the reestablishment of the spring as it is already expected to occur under the existing mine plan.

Further, this spring is not within the footprint of the area that would be mined or subsided under the proposed action. As such, its physical setting would not be disturbed.

A reach of the Miller Canyon channel would be undermined and subsided as a result of the proposed action. The small earthen dam mentioned in **Section 3.1.1** is within this reach, as is the noted zone of piping and interception of stream flows. As was previously discussed, the dominant source for water stored in the dam and conveyed through Miller Canyon is excess irrigation water that is released under the current flood-irrigation system. As this part of the Tract is mined and subsided, ground movements could occur and it would be possible that the already-compromised dam could fail further, perhaps ceasing to have any impoundment capacity, and that the already occurring piping and interception of flows could be exacerbated.

Because the dam is located on ground that Consol owns, they would have several options: (1) reconstruct the dam at that location for the lessee's use, (2) construct another dam further upstream outside of the Tract, (3) enlarge the excavated impoundments located on their property north of the Tract for the lessee's use, or (4) forego the ability to impound water at this location. The fact that the flood irrigation system may soon be converted to a pressurized sprinkler irrigation system and the fact that this structure is not a State Engineer-permitted structure reduce the level of impact associated with the potential loss of the dam's functionality.

The proposed action's potential exacerbation of the piping and interception of flows that are already occurring within this reach of Miller Canyon would represent a greater concern. Once the channel subsides, the intercepted water may not be able to make its way back into the channel as it currently does. In addition to the physical alteration of the existing piping and joint network, the overall lowering of the channel bed through this reach would locally change the channel gradient. These combined effects could result in less water continuing downstream to lower Miller Canyon and Muddy Creek. Because most Miller Canyon discharge is related to irrigation, and comprised of flow that is regulated but not measured, quantification of this potential water loss is not possible. However, as noted, flows may diminish in Miller Canyon in the near future, irrespective of the proposed action, due to the irrigation system conversion. Any loss of water in Miller Canyon due to the proposed action may simply cause this change to occur sooner that it would otherwise occur. Regardless, the BLM's stockwatering right in lower Miller Canyon, which apparently depends in large part upon irrigation releases, may be affected.

The fate of any Miller Canyon flow that may be lost from the surface within the subsided area cannot be predicted with certainty. It may, as it does currently, move laterally down gradient and reappear in the stream channel downstream of the mined area. Alternatively, its movement may have a greater vertical component, and be conveyed into the mine via tension cracks and/or natural joints. If the latter, it would require handling and subsequent discharge to Quitchupah Creek through Consol's UPDES permit.

4.2.1.2 Farmlands (Prime and Unique)

No surface disturbances (other than indirect subsidence-caused settling) would occur under the Proposed Action, thus direct impacts to prime or unique farmland would not occur. However, within the 55 acres of the Tract where full extraction would occur, planned subsidence may locally affect surface soils through slight but non-uniform settling and development of tension cracks. Soil erosion has the potential for becoming accelerated in areas where surface runoff flows into the subsidence surface cracks. This accelerated soil erosion potential would have the greatest potential in soil map units with K-factors greater than 0.37 (BeB, Hs, KIB, PCE2, and PeC2) and could result in localized sheet and rill erosion. Soil map units BeB, HS, and KIB have slope ranges of 1 to 3 percent and PeC2 has a slope range of 3 to 6 percent which will reduce the chance of soil erosion. Map unit PCE2 has a slope range of 3 to 20 percent which increases the chance of soil erosion. However, over time, tension cracks would be likely to fill and seal, particularly in the areas where soils have substantial clay components and overly shale parent materials (soil mapping units PCE2 and NME2).

Coal mine subsidence could have an impact on flood irrigation of the area designated as Prime Farmland (Fish 2008). Mine subsidence would have less impact if the area was converted to sprinkler irrigation, which is being done on several of the adjacent farms.

4.2.1.3 Livestock Grazing

Within the existing, adjacent portions of the Emery Mine, there have been no impacts to cattle and no diminishing of grazing potential resulting from retreat mining in the subsided areas. Because the adjacent area is similar in topography and resources, it is reasonable to assume subsidence within the Tract would not adversely affect the future health of livestock grazing.

The only impacts to livestock would be with regard to subsidence and water sources. Subsidence could impact the existing livestock watering sources by cutting off water to lower Miller Canyon. The impact could limit watering options to the holders of grazing rights on both the Consol and BLM landholdings. The small earthen dam mentioned in **Section 3.3.1** is within this reach, as is the noted zone of piping and interception of stream flows. As was previously discussed, the dominant source for water stored in the dam and conveyed through Miller Canyon is excess irrigation water that is released under the current flood-irrigation system. As this part of the Tract is mined and subsided, it would be likely that the already-compromised dam would fail further, perhaps ceasing to have any impoundment capacity, and that the already occurring piping and interception of flows would be exacerbated.

4.2.1.4 Wetlands/Riparian Zone

A reach of the Miller Canyon channel would be undermined and subsided as a result of the proposed action. This would potentially exacerbate the piping and interception of flows that are already occurring within this reach of Miller Canyon. Once the channel subsides, the intercepted water may not be able to make its way back into the channel as it currently does, which could result in less water continuing downstream to lower Miller Canyon (see **Section 4.2.1.1**). This would reduce the water available for the current wetlands and riparian zone within the Tract and lead to these areas being reduced in size or eventually lost.

4.2.1.5 Fish and Wildlife species, including special status species and migratory birds

Underground coal extraction, and subsequent surface subsidence, is not expected to cause significant impacts to mammals or substantially affect essential habitat.

Impacts to prairie-dogs and burrowing owls may occur if subsidence occurs directly under colonies. Direct mortality is not expected; however, prairie dogs or burrowing owls present in areas where subsidence is occurring would be displaced to other burrows. If a large area becomes unsuitable, displacement may cause adverse reproductive effects in adjacent areas due to increased population densities. In general subsidence impacts (appearance of cracks up to several inches in width; see **Appendix B**) would occur fairly quickly after pillars are removed underground. If subsidence were to occur during prairie dog breeding or during burrowing owl nesting (March through June, for both species) adverse population impacts could occur. Young white-tailed prairie-dogs are not able to leave burrows for several months and may be directly impacted by falling into cracks. Likewise, fledgling burrowing owls may not be mobile for several weeks or months and could fall into cracks or be abandoned as adults vacate the burrow. Impacts to populations of sensitive species within the Tract could occur if subsidence occurred within burrow aggregations and during the time many (immobile) young were present.

Direct impacts to migratory birds would not occur. However, there may be a loss of potential riparian habitat in the future (indirect impact) if the water flow is diminished though Miller Canyon due to subsidence (see **Sections 4.2.1.3** and **4.2.1.1**).

4.2.1.6 Mitigation Measures

In the event of loss of the dam and the subsequent water storage capacity, the situation could be remedied in one of several ways. Because the dam is located on ground that Consol owns,

they would have several options: (1) reconstruct the dam at that location for the lessee's use, (2) construct another dam further upstream outside of the Tract, (3) enlarge the excavated impoundments located on their property north of the Tract for the lessee's use, or (4) forego the ability to impound water at this location. The fact that the flood irrigation system may soon be converted to a pressurized sprinkler irrigation system and the fact that this structure is not a State Engineer-permitted structure reduce the level of impact associated with the potential loss of the dam's functionality.

4.2.2 Alternative B - No Action

If the proposed project is rejected, there would be no resultant direct, indirect or cumulative impacts to the following:

- Air Quality
- ACECs
- Cultural Resources
- Environmental Justice
- Farmlands (Prime and Unique)
- Floodplains
- Invasive, Non-native Species
- Native American Religious Concerns
- Threatened, Endangered, or Candidate Plant and Animal Species
- Wastes (Hazardous or Solid)
- Water Quality
- Wetlands/Riparian Zones
- Wild and Scenic Rivers
- Wilderness
- Rangeland Health Standards
- Livestock Grazing
- Woodland/Forestry
- Vegetation and Fish and Wildlife Including Species Other than Candidate or Listed Species
- Soils
- Recreation
- Visual Resources

- Paleontology
- Lands/Access
- Fuels/Fire Management
- Socio-economics
- Wild Horses and Burros
- Wilderness Characteristics

If the Proposed Action (Alternative A) were rejected, the following potential impacts could occur.

4.2.2.1 Geology/Mineral Resources/Energy Production

The rejection of the proposed project would result in the loss of approximately 440,000 recoverable tons of coal. The selection of the No Action Alternative would be inconsistent with the BLM mission of multiple uses and the BLM policy of making public lands available for a variety of uses as long as those uses are conducted in an environmentally sound manner.

4.2.2.2 Socio-economics

If the proposed project is rejected, the life of the mining operation would not be extended. Consol would shut down the mine after the mining was complete per the original mining plan. In the present 2008 economy, if Consol is not able to move workers to other mining operations, jobs will be lost and workers would face a depleted job market. Because of the current downturn in the economy, the loss of any revenues would have an impact on the community of Emery as well as at the county level. Increases in unemployment benefits plus the loss of taxes would be felt even if the jobs loss at Consol were small. There would be a loss of the production royalty and bonus payment on federal coal that is split 50/50 with the state, and distributed to the county in which the coal is mined. All of these effects would occur under the Proposed Action as well as No Action, but would occur later in time, after the coal in the Tract is depleted.

In 2007, Emery County's decline in employment made the county the second worst performing labor market in the state (Utah Department of Workforce Statistics 2008). Sevier County has experienced an increase in unemployment, 3.9%, up from 2007's 2.8% (Economic Development Intelligence System 2008). Because the mining industry is a major contributor to the economy of both counties and 2007 saw a slump in mining employment opportunities, any additional layoffs would be deeply felt both at the local and the county levels.

4.3 Cumulative Impacts Analysis

Cumulative impacts are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions. The Cumulative Effects Area (CEA; see **Figure 6**) for this project was delineated as the two HUC 6 subwatersheds that intersect the Tract:

Christensen Wash-Quitchupah Creek (140700020106; about 19,500 acres) and Miller Canyon-Muddy Creek (140700020205; about 22,000 acres).

4.3.1 Past and Present Actions:

In addition to the underground coal mining occurring at the Emery Mine, adjacent to the Miller Tract, past or present actions in the CEA consist mainly of mining and agriculture.

There are no coal-fired power plants or active surface mines within the CEA, however there is one other underground coal mine besides Consol's active Emery Mine. The other underground mine in the CEA is the Sufco Mine, which occupies a portion of the northwestern corner of the CEA, mainly in Sevier County. It is currently owned by Arch Coal, and has been operating for more than 60 years. As with the Emery Mine, the Sufco Mine also intercepts groundwater and discharges it to the surface under a UPDES Permit. The Sufco Mine discharges into Quitchupah Creek, and flows enter the CEA from the west. Subsidence also occurs within the Sufco Mine area, although mostly outside of the CEA.

Agriculture within the CEA occurs in many areas of the valley, including the area adjacent to the Town of Emery, along Quitchupah Creek west of the Emery Mine, and to a much lesser extent along Muddy Creek near Interstate 70. Nearly the entire area between the Emery Mine and Emery town is irrigated and supports alfalfa. It is supported by stream flows diverted out of Muddy and Quitchupah creeks; agriculture is the predominant water use in the CEA. Inefficient flood irrigation has been practiced in this area for more than 100 years, and has resulted in artificially high water tables, poor drainage, and salt accumulations due in part to deep percolation (NRCS 2004).

4.3.2 Reasonably Foreseeable Action Scenario (RFAS)

The following RFAS identifies reasonably foreseeable future actions that would cumulatively affect the same resources in the cumulative impact area as the proposed action and alternatives.

As the Sufco Mine continues to operate, it is expected to continue discharging about four cubic feet per second (cfs) of intercepted groundwater to the North Fork of Quitchupah Creek. This discharge would continue to provide a significant portion of the stream flow within the CEA.

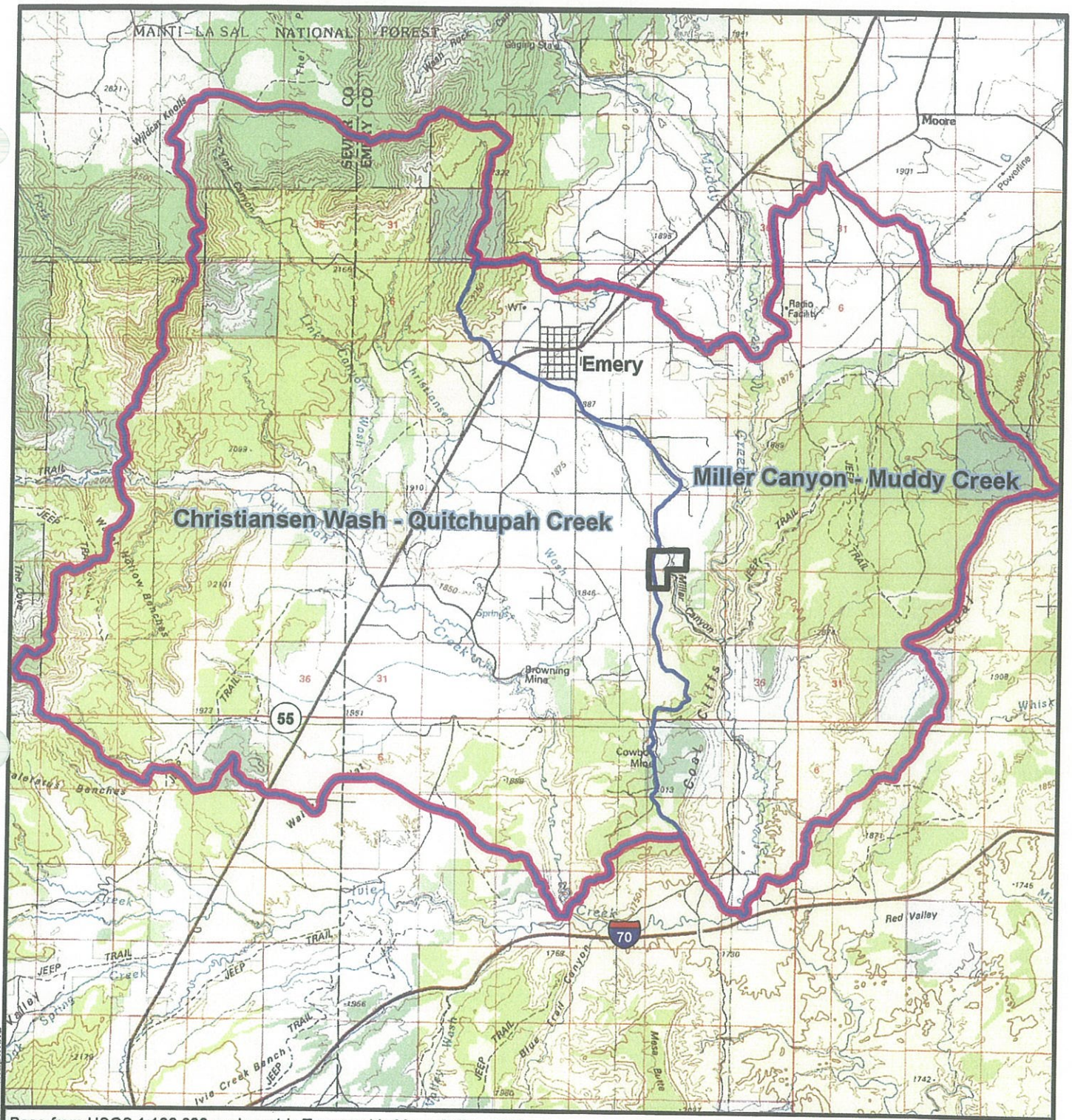
As described in Section 3.3.1, irrigation practices in the Emery and Quitchupah Creek areas are likely to be converted from flood methods to pressurized sprinkler methods in the near future. Soon after implementation, return flow contributions to surface streams, including Miller Canyon, would likely be reduced or in some areas eliminated; over the longer term, saline seepage and high water tables would likely decline.

4.3.3 Cumulative Impacts

There would be no cumulative impacts to grazing resources, wetland/riparian areas, or wildlife including special status species.

Surface water flow regimes and ground water elevations within the CEA would continue to be influenced by underground mine interception and discharge to the surface, and agriculture-related stream withdrawals and irrigation. Some of these influences result in gains to stream

channels (i.e. UPDES discharges) and some result in losses (i.e. irrigation diversions); similarly, groundwater elevations can be lowered due to mine dewatering and increased due to over-application during irrigation. If the potential impacts to surface and groundwater as described in Section 4.4.2.1 result from the proposed action, they would likely represent a negligible contribution to cumulative impacts over the long term. If subsidence results in the interception of irrigation return flows in Miller Canyon (a potential if mining occurs prior to irrigation conversion), there could be a net reduced flow through Miller Canyon and a net increased flow to Quitchupah Creek (because the intercepted water would be discharged through the Emery Mine UPDES outfall).



Base from USGS 1:100,000-scale metric Topographic Map: Salina, Utah
Land Status and Watershed Data from http://agrc.its.state.ut.us/

10,000 0 10,000 Feet
2,500 0 2,500 Meters

Legend

- Track Boundary
- HUC 12 Watershed Boundary
- Cumulative Effects Boundary

Land Status

- Bureau of Land Management (BLM)
- US Forest Service (USFS)
- State
- Private

N

CONSOL ENERGY
MILLER CANYON TRACT EA

FIGURE 6
Cumulative Effects Map

jbr environmental consultants, Inc.

DESIGN BY	DRAWN BY	SCALE	DATE DRAWN	LAST REVISION DATE
LA	CP	1:120,000	12/18/08	-

drawings\Miller Canyon\Fig5 Cumulative Effects Map.mxd

5 CONSULTATION AND COORDINATION

5.1 Introduction

The issue identification section of **Chapter 1** identifies those issues analyzed in detail in **Chapter 4**. **Appendix A** provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in **Sections 5.2** and **5.3** as follows.

5.2 Persons, Groups, and Agencies Consulted

Table 5-1. List of all Persons, Agencies, and Organizations Consulted for Purposes of this EA.

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
U.S. Fish and Wildlife Service (USFWS)	Information on Consultation, under Section 7 of Endangered Species Act (16 USC 1531)	Consultation was deemed unnecessary because there are no Threatened or Endangered species or designated Critical Habitats within the Tract.
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	This project should have no adverse effects upon cultural resources. Six eligible sites are located northwest of the coal burn line and should require periodic monitoring for subsidence impacts
List of tribes: Shoshone Paiute Navajo Ute Hopi Southern Ute Pueblo	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	The Tribe has not responded identifying any concerns as of this writing. Lack of response is interpreted by the BLM to indicate that the Tribe has no concerns relative to the proposed action.

5.3 Summary of Public Participation

During preparation of the EA, the public was notified of the proposed action by posting on the Utah Environmental Notification Bulletin Board (ENB) on October 15, 2008. The process used to involve the public included internet posting of the proposed project description.

5.4 List of Preparers

5.4.1 BLM

Name	Title	Responsible for the Following Section(s) of this document
Steve Rigby	Acting Assistant Field Manager Coal/Lead Mining Engineer	All
Mike Glasson	Geologist	Geology, Coal Resources, All
Jeffrey Brower	Hydrologist	Hydrology Resources
Ray Jenson	Rangeland Mngt Specialist (RMS)	Grazing Resources
Floyd Johnson	NEPA	NEPA
Mike Tweddell	Wild Horse RMS	Range
Blaine Miller	Archaeologist	Cultural Resources
Tom Gnojek	Outdoor Recreation Planner	Wilderness Resources
David Waller	Wildlife Biologist	Wildlife Resources
Wayne Ludington	Assistant Field Manager	Renewable Resources
Suzy Wiler	Physical Science Technician	Native American Consultation, Legal

5.4.2 Non-BLM

Name	Title	Responsible for the Following Section(s) of this Document
Linda Matthews	Project Manager	All sections; QC/QA
Karla Knoop	Hydrologist	Water Resources
Devetta Hill	Senior Ecologist	All sections
Laura Arneson	Environmental Analyst	Grazing, Riparian/Wetland, Wildlife
Robert Long	Soils Scientist	Soils, Prime & Unique Farmlands
Patrick Collins	Scientist	Vegetation, TES, Weeds

6 REFERENCES AND ACRONYMS

6.1 References Cited

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Consolidation Coal Company. 2008b. Perpetual Coal Pillar Support of Emery County Road, Emery Mine, 00-North Section 08/18/08 Consolidation Coal Company Route 148 North Sesser IL 62884. Study Reviewed and Accepted: Michael K. McCarter, P.E. Chairman, Professor Mining Engineering Dept. University of Utah, Salt Lake City, Utah 84112.

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Mount Nebo Scientific, Inc. 2008c. Prairie-Dog Survey: Miller Tract Area, Emery Mine. Prepared by Patrick D. Collins for Consol Energy, Sesser Illinois. Mt. Nebo Scientific, Springville, Utah. November 2008

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6.2 List of Acronyms Used in this EA

ACEC	Areas of Critical Environmental Concern
BLM	Bureau of Land Management
BMP	Best Management Practice
CEA	Cumulative Effects Area
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DR	Decision Record
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of No Significant Impact
KRCRA	Known Recovery Coal Resource Area
LBA	Lease by Application
LMU	Land Management Unit
MLA	Mineral Leasing Act
MSHA	Mine Safety and Health Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSM	Office of Surface Mining
RFAS	Reasonably Foreseeable Action Scenario
RMP	Resource Management Plan
ROD	Record of Decision
SHPO	State Historic Preservation Office
SITLA	School and Institutional Trust Lands Administration
SR	State Road
SWPPP	Storm Water Pollution Prevention Plan
TDS	Total Dissolved Solids
UDOGM	Utah Department of Oil, Gas, and Mining
UDPES	Utah Pollutant Discharge Elimination System
UDWQ	Utah Division of Water Quality
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

APPENDIX A

Interdisciplinary Team Analysis Record Checklist

INTERDISCIPLINARY TEAM ANALYSIS RECORD CHECKLIST

Project Title: Miller Canyon Tract LBA EA

NEPA Log Number: 070-2008-104

File/Serial Number:

Project Leader: Steve Rigby

DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for significant impact analyzed in detail in the EA; or identified in a DNA as requiring further analysis

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section C of the DNA form.

Determination	Resource	Rationale for Determination*	Signature	Date
		CRITICAL ELEMENTS		
NI	Air Quality	No surface development. No impacts to ambient air quality or background noise. No increase in mine traffic.		01/27/09
NP	Areas of Critical Environmental Concern	No ACEC's in the Tract.		1/27/09
NI	Cultural Resources	**Class III inventory completed of 120-acre Tract. Five NRHP eligible sites (no rock shelters) would be monitored during subsidence. There would be no surface development on the Tract.**		01/27/09
NI	Environmental Justice	No minority or low-income communities would be disproportionately affected by the Project.		01/28/09
NI	Farmlands (Prime or Unique)	There is one area identified with the potential to be prime farmland if the area is irrigated. The Project is within heavily grazed desert scrub. None of the surface area would be impacted by the proposed leasing or development of the Miller Canyon Tract. There would be no surface disturbance and subsidence impacts would be minimal.		01/27/09

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Floodplains	Drainages in the Tract do not convey a large amount of seasonal runoff. Flooding from irrigation may increase flows in Miller Canyon within the Tract but there is no floodplain area that would be affected by the project.		01/27/09
NI	Invasive, Non-native Species	Field bindweed was observed within the Tract along the paved county road and salt cedar was observed in Miller Canyon. Because there will be no soil disturbance there would be no accidental spreading of invasive species.		1/28/09
NI	Native American Religious Concerns	There are no known interests or properties held in trust for Tribes by the United States government within the Tract.		1/27/09
NP	Threatened, Endangered or Candidate Plant Species	No threatened, endangered or candidate plant species are known to occur in the proposed Tract. Potential habitat exists within shadscale vegetation but this habitat would not be affected by the project because there would be no surface disturbance.		1/28/09
NP	Threatened, Endangered or Candidate Animal Species	No threatened, endangered, or candidate species nor their habitat exists within the project boundaries.		2009 Jan-28
NI	Wastes (hazardous or solid)	Any waste materials from the underground development of the Miller Canyon Tract would be handled appropriately, according to the existing MRP		01/27/09
PI	Water Quality (drinking/ground)	Water quality may be affected by underground mining.		01/27/09
PI	Wetlands/Riparian Zones	Subsidence may drain water from the riparian zone in Miller Canyon and elsewhere within the Tract.		1/28/09
NP	Wild and Scenic Rivers	There are no designated wild and scenic rivers in or near the Tract.		1/28/09
NP	Wilderness	No designated wilderness areas or WSAs occur within or adjacent to the Tract.		1/28/09
		OTHER RESOURCES / CONCERNS		
NI	Rangeland Health Standards and Guidelines	Allotments within the Tract meet RHS. There would be no surface disturbance thus RHS would be maintained.		1/27/09
PI	Livestock Grazing	Consol & BLM surface grazing rights are currently provided to Morris Sorenson. No surface development would occur on the Tract. Subsidence effects would not impact grazing. The only potential effect is to stock watering ponds.		1/27/09
NI	Vegetation including Special Status Plant Species other than FWS candidate or listed species	The Tract is within heavily grazed desert scrub. None of the vegetation would be impacted by the proposed leasing or development of the Miller Canyon Tract. There would be no surface disturbance and subsidence impacts would be minimal.		1/28/09
PI	Fish and Wildlife Including Special Status Species other than FWS	Wildlife habitats may be affected by subsidence impacts, including riparian habitat for migratory birds and sensitive burrowing animals (burrowing owl, white-tailed prairie dog).		2009 Jan-28

Determination	Resource	Rationale for Determination*	Signature	Date
	candidate or listed species e.g. Migratory birds.			
NI	Recreation	The project would not stop or change recreation opportunities or behavior within the Tract.		
NI	Paleontology	**There is potential for fossil recovery on the surface.**		
NI	Fuels / Fire Management	None of the surface area would be impacted by the proposed leasing or development of the Miller Canyon Tract. There would be no surface disturbance and subsidence impacts would be minimal.		1/28/09
NP	Wild Horses and Burros	No wild horses and burros were observed within the Tract. The area does have fencing which would limit grazing access. None of the surface area would be impacted by the proposed leasing or development of the Miller Canyon Tract. There would be no surface disturbance and subsidence impacts would be minimal.		1/27/09
NI	Wilderness characteristics	The Tract is lacking wilderness characteristics.		
NP	Other: Lands	**Access already exists to Lease.**		1/27/09
	Other:			

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
NEPA / Environmental Coordinator		1/28/09	
Authorized Officer		1/28/09	

**Rationale for Determination is required for all "NIs" and "NPs." Write issue statements for "PIs"*

APPENDIX B

NRCS Correspondence and Information

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
240 West Highway 40 (333-4)
Roosevelt, UT 84066

June 2, 2008

Re: Emery Mine LBA – Miller Canyon Tract
Prime, State Important and Unique Farmland
South ½ of SW ¼, Sec 23, T. 22 S., R. 6 E., SLBM
North ¼ of NW ¼, Sec 26, T. 22 S., R. 6 E., SLBM

We have reviewed your request for a determination of prime, state important and unique farmlands. On the enclosed soils map, the area designated as soil survey mapping unit BlB and irrigated, meet the criteria for prime farmlands.

All other soils in the designated area on the enclosed soils map do not meet the criteria for prime or state important farmland because they have an aridic or torric moisture regime and do not have an established irrigated system of adequate quality or quantity. Emery County has not designated any areas as unique farmland or land of local importance.

I am enclosing copies of the soils map for the area and Form AD-1006 FARMLAND CONVERSION IMPACT RATING for your use.

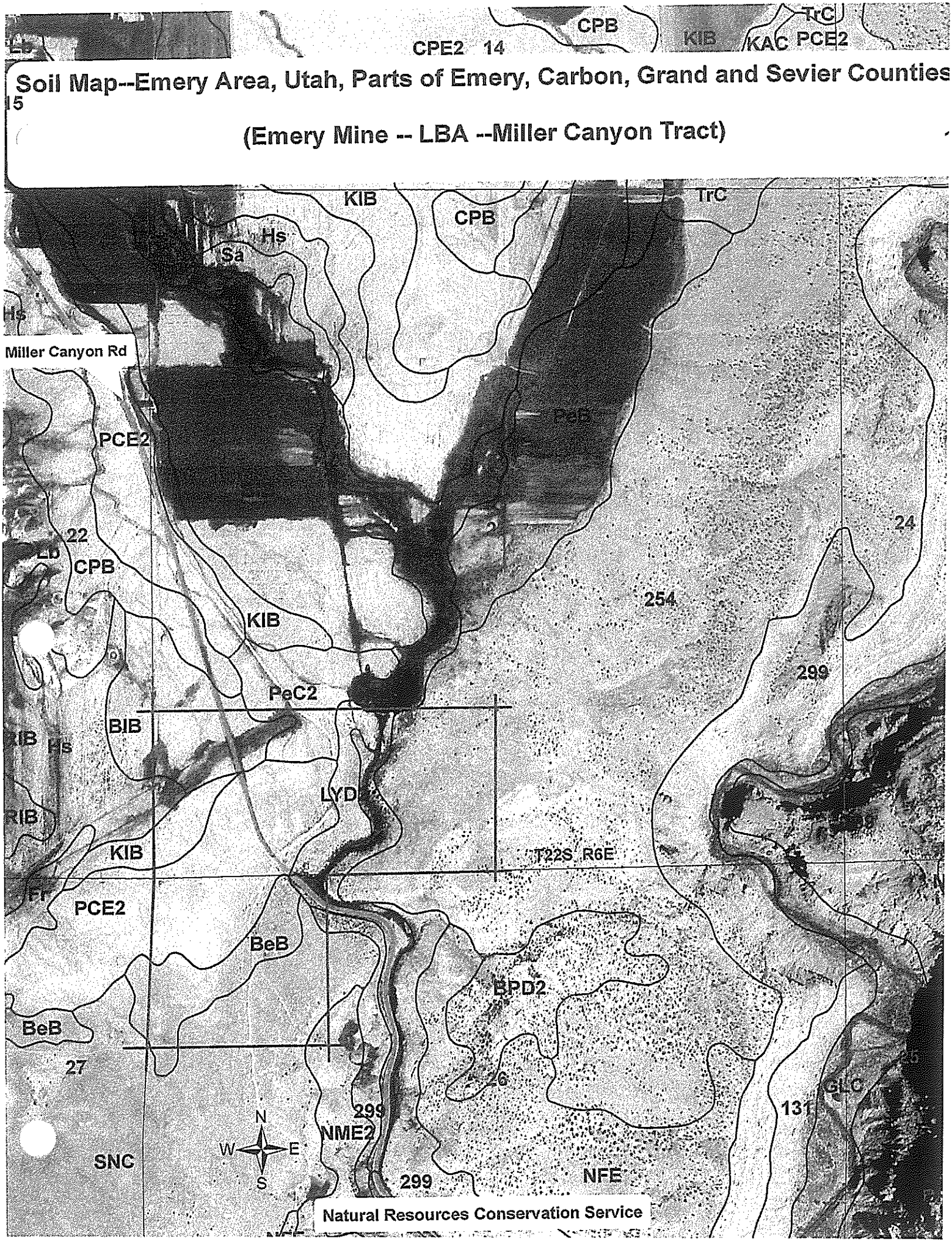
Robert H. Fish
Area Resource Soil Scientist

Enclosure

Cc: Wayne Greenhalgh, D.C., NRCS, Price, UT
Robert E. Long, Long Resource Consultants, Inc., Morgan, UT

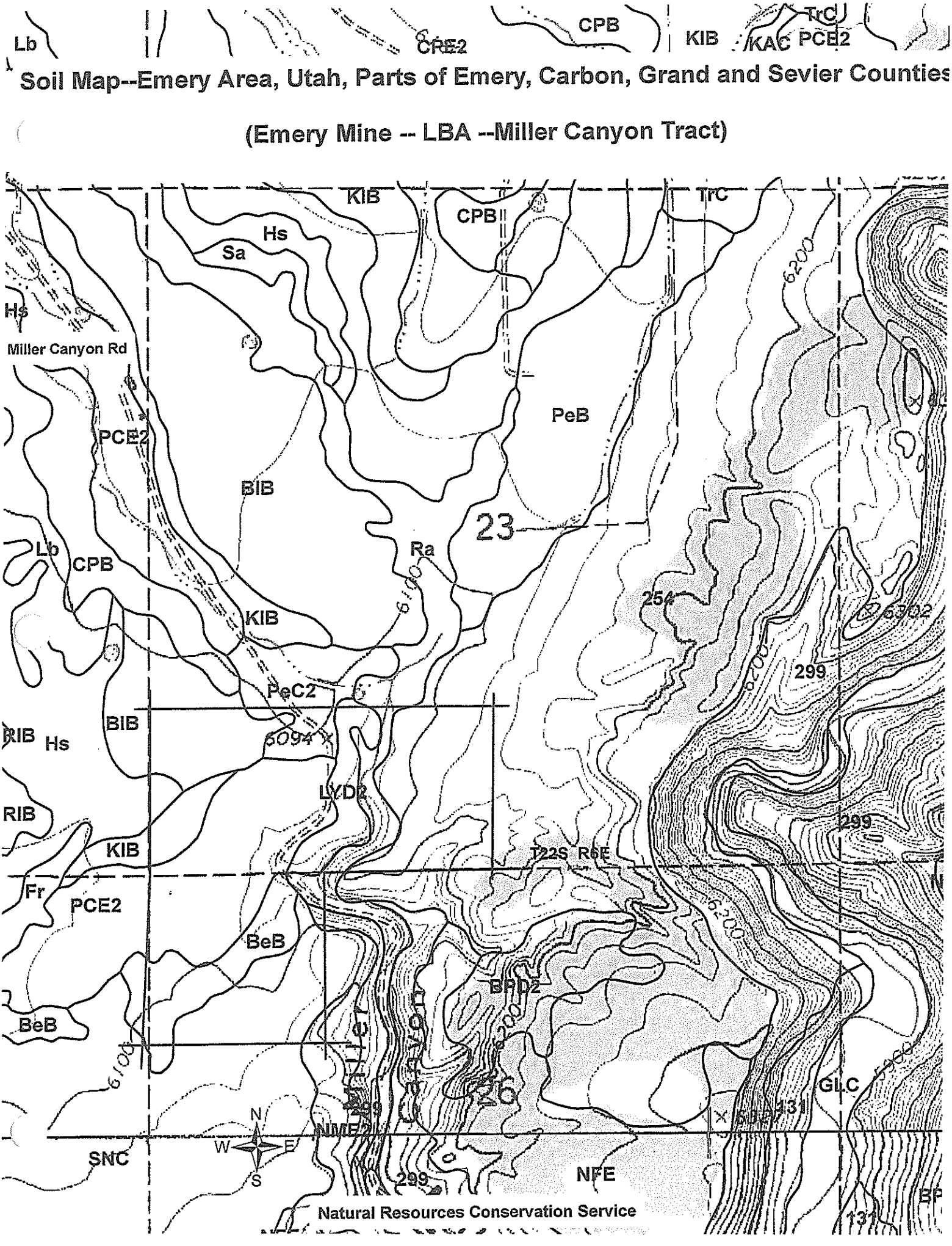
Soil Map--Emery Area, Utah, Parts of Emery, Carbon, Grand and Sevier Counties

(Emery Mine -- LBA --Miller Canyon Tract)



Soil Map--Emery Area, Utah, Parts of Emery, Carbon, Grand and Sevier Counties

(Emery Mine -- LBA --Miller Canyon Tract)



U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 5/29/08
Name Of Project Emery Mine LBA -- Miller Canyon Tract	Federal Agency Involved
Proposed Land Use	County And State Emery County, Utah
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 5/29/08

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☑	No ☐	Acres Irrigated 33,099	Average Farm Size 126
Major Crop(s) alfalfa,sm grains, corn, irrig pastur	Farmable Land In Govt. Jurisdiction Acres: 0 %		Amount Of Farmland As Defined in FPPA Acres: %	
Name Of Land Evaluation System Used Prime Farmland Criteria	Name Of Local Site Assessment System Emery Area Soil Survey UT623		Date Land Evaluation Returned By NRCS 6/2/08	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	0.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	4.2			
B. Total Acres Statewide And Local Important Farmland	0.0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.1			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	0.0			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	100	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	100	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	100	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 – Federal agencies involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form.

Step 2 – Originator will send copies A, B and C together with maps indicating locations of site(s), to the Natural Resources Conservation Service (NRCS) local field office and retain copy D for their files. (Note: NRCS has a field office in most counties in the U.S. The field office is usually located in the county seat. A list of field office locations are available from the NRCS State Conservationist in each state).

Step 3 – NRCS will, within 45 calendar days after receipt of form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland.

Step '4 – In cases where farmland covered by the FPPA will be converted by the proposed project, NRCS field offices will complete Parts II, IV and V of the form.

Step 5 – NRCS will return copy A and B of the form to the Federal agency involved in the project. (Copy C will be retained for NRCS records).

Step 6 – The Federal agency involved in the proposed project will complete Parts VI and VII of the form.

Step 7 – The Federal agency involved in the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA and the agency's internal policies.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

Part I: In completing the "County And State" questions list all the local governments that are responsible for local land controls where site(s) are to be evaluated.

Part III: In completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them.

2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities) that will cause a direct conversion.

Part VI: Do not complete Part VI if a local site assessment is used.

Assign the maximum points for each site assessment criterion as shown in § 658.5 (b) of CFR. In cases of corridor-type projects such as transportation, powerline and flood control, criteria #5 and #6 will not apply and will, be weighed zero, however, criterion #8 will be weighed a maximum of 25 points, and criterion #11 a maximum of 25 points.

Individual Federal agencies at the national level, may assign relative weights among the 12 site assessment criteria other than those shown in the FPPA rule. In all cases where other weights are assigned relative adjustments must be made to maintain the maximum total weight points at 160.

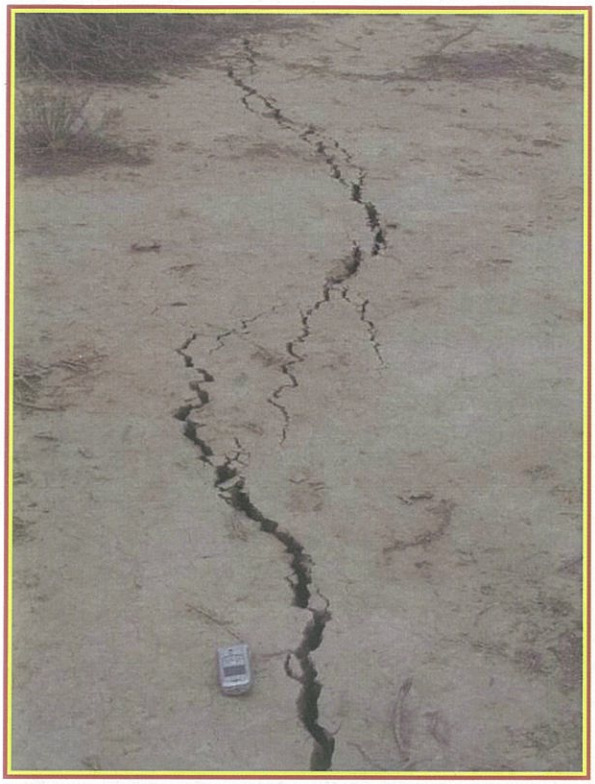
In rating alternative sites, Federal agencies shall consider each of the criteria and assign points within the limits established in the FPPA rule. Sites most suitable for protection under these criteria will receive the highest total scores, and sites least suitable, the lowest scores.

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, adjust the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points, and alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site "A."}$$

APPENDIX C

Photos of subsidence at Emery Mine



Photos 1, 2, and 3 GPS Unit is 5 x 3 inches for scale. April 2008.

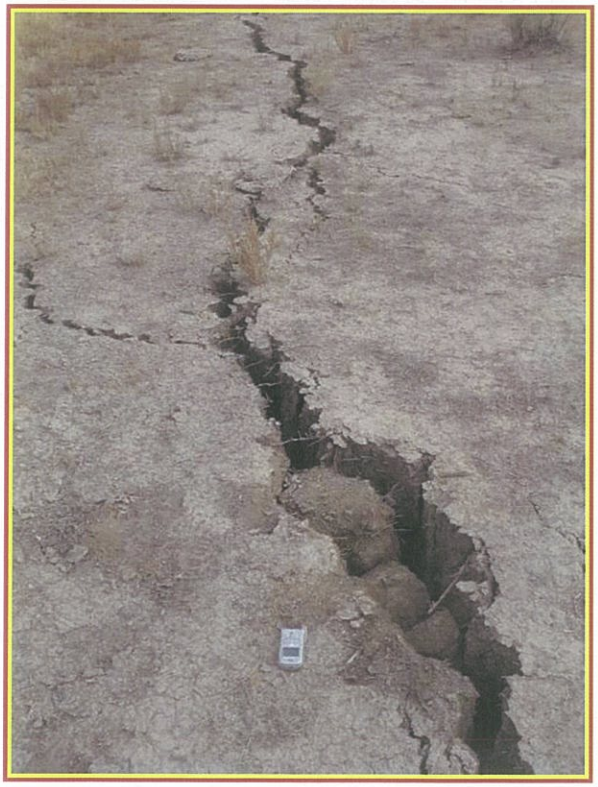


Photo 2

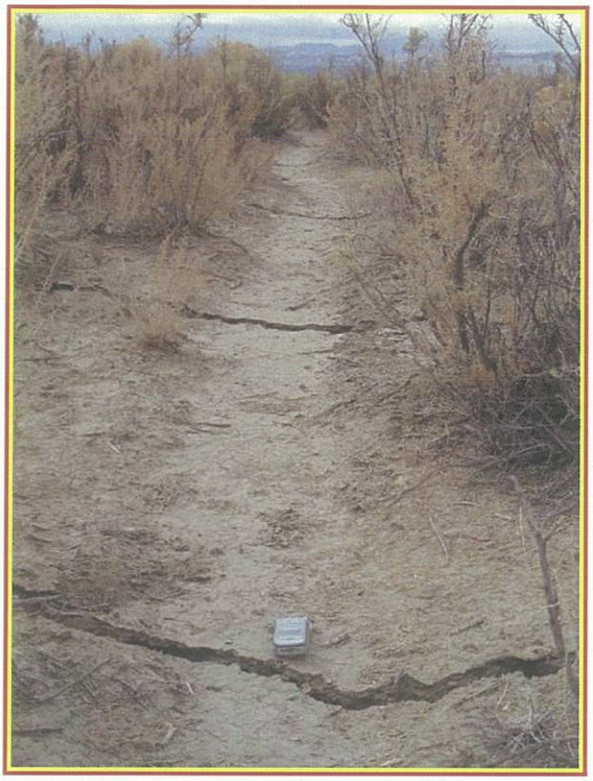


Photo 3

Photo 4